THE INFLUENCE OF CHINESE ARCHITECTURE ON TRADITIONAL MELAKA MOSQUES

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ABSTRACT

Since the sacred architecture manifests a clear reflection of each region's history, culture, and identity, the traditional mosques, as the symbols of Islamic art and architecture, always have intrigued countless architects and scholars worldwide. Although numerous materials have been documented about various mosques' regional typologies, the Southeast Asian mosque architectural style has been surprisingly neglected. Since the advent of Islam in Southeast Asia during the 13th-15th centuries, innumerable traditional mosques with distinctive architectural form, constructional techniques, and ornamentation, very different from what is known as a mosque in Middle East and Central Asia, were erected in the region. Melaka, as the initial centre to disseminate Islam into Southeast Asia, holds valuable legacies, which are among the earliest mosques built in the area that remained intact, while represents a spectacular architectural style, with unique characteristics. Due to her special geographical location (located between great civilization of India and China), as well as her powerful role during the 15th -18th centuries, various ethnic groups from different cultures have been always attracted by Melaka, and influenced its architecture. Southeast Asia has been in a close connection with India since the beginning of Christian era, while Melaka has had a strong relation with China since the 15th century. As a result, Traditional Melaka mosque architecture shows foreign influences from great civilization of India and China, while is introducing an authentic style of indigenous Southeast Asian architecture. This study intends to identify the Chinese architectural influences on six selected traditional mosques in Melaka through employment of the Historical-Comparative Research method, by means of the historical and architectural literature, site observations, analysis, comparison, and interpretation. In this research, the Classical Chinese Architecture and Traditional

Melaka mosque architecture have been explored and analysed, in order to provide the best feasible comparisons between Classical Chinese Architecture and selected case studies. This study focuses on architectural components of the roof, the façade, and the base from different aspects such as form, ornamentation, material and proportion. Through interpretation of the provided comparisons, this study indicates that the Chinese influences on Traditional Melaka mosques mostly occur in the ornamental means, the application of certain materials, the appearance of certain architectural elements, and to some extent in the proportions.

ABSTRAK

Seni bina suci dapat mencerminkan sejarah, budaya dan identiti sesebuah rantau. Masjid tradisional merupakan simbol kesenian dan seni bina Islam yang telah sekian lama menarik perhatian arkitek dan para cendekiawan dari seluruh pelusuk dunia. Walaupun terdapat pelbagai dokumentasi mengenai tipologi serantau seni bina masjid, kajian khusus mengenai masjid dari rantau Asia Tenggara sangat kekurangan. Perkembangan agama Islam di Asia Tenggara semasa kurun ke-13 hingga 15 adalah sejajar dengan pembangunan pelbagai masjid tradisional dengan rekabentuk seni bina, teknik pembinaan dan perhiasan yang sangat unik jika dibandingkan dengan masjid-masjid lain yang lazim ditemui di Timur Tengah dan Asia Tengah. Sebagai pusat terawal penyebaran agama Islam di Asia Tenggara, Melaka mempunyai warisan seni bina masjid terawal yang dibina di rantau ini dengan gaya seni bina dan ciri-ciri kesenian yang menakjubkan dan masih lagi kekal terpelihara dengan baik. Dengan kedudukan geografi Melaka di antara dua tamadun bersejarah utama iaitu India dan China serta peranan penting pelabuhan Melaka semasa kurun ke-13 hingga 15, kehadiran pelbagai kumpulan etnik dapat dilihat sedikit sebanyak telah mempengaruhi seni bina tempatan. Kesan hubungan rapat India dengan Asia Tenggara sejak awal era Kristian dan antara Melaka dengan China sejak kurun ke-15 dapat dilihat dalam seni bina masjid tradisional bercirikan Melaka yang menerapkan pengaruh dari kedua-dua tamadun tersebut dalam rekabentuk gaya seni bina tradisional rantau Asia Tenggara. Kajian ini bertujuan untuk mengenal pasti pengaruh seni bina Cina pada enam masjid tradisional terpilih di Melaka menggunakan kaedah Penyelidikan Sejarah-Perbandingan (*Historical-Comparative Research method*) yang melibatkan kajian kesusasteraan sejarah dan seni bina, lawatan tapak, analisis, perbandingan dan penafsiran. Seni bina Cina klasik dan seni bina masjid gaya Melaka telah dikaji dan

dianalisa untuk memahami kaitan antara seni bina klasik Cina dan kajian kes yang terpilih. Kajian ini memberi tumpuan khusus kepada komponen-komponen bumbung, tampak dan base dari aspek-aspek yang berbeza seperti bentuk, hiasan, bahan binaan dan perkadaran. Kajian ini merumuskan bahawa pengaruh Cina dalam masjid tradisional gaya Melaka dapat dilihat pada perhiasan, penggunaan bahan pembinaan terpilih, unsur-unsur seni bina yang tertentu, serta perkadaran yang digunapakai dalam seni bina masjid.

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

CHAPTER 1

INTRODUCTION

1.1 Introduction

Sacred architecture has always been an important part of architectural studies worldwide. Ancient civilizations in architectural practices mainly concentrated on religious themes, and in contemporary time, sacred buildings not only represent the culture and the history of one region, but also reveal a variety of information about its social, political, and economic development. Mosque as the most frequent monument in Islamic architecture, and the symbol of Islamic art and culture, has attained special place and established various architectural styles in not only the Muslim countries, but also in non-Islamic territories.

Islam was known in Southeast Asia since the advent of the religion in her homeland; Middle East. However, it took five centuries for the indigenous kingdoms and commoners to accept the new religion as their spiritual savor and to start noticeable Islamic practices in the region. Later on, numerous mosques were erected throughout Southeast Asia; the most interesting architectural specimens in form and style, which have followed local building traditions and climatic conditions instead of replicating traditional mosques' styles from Middle East or Central Asia (Vlatseas, 1990; ONeill, 1994; Michell, 1995). Although Southeast Asian traditional mosques do not follow Middle Eastern or Mughal styles in the form, techniques, or decoration, they show fundamental similarities, as they all share same source of inspiration: Islam (Chen, 1998).

Following this manner, Malaysian Islamic architecture is no exception. The Malaysian vernacular mosques, like the other Southeast Asian counterparts, do not

replicate many of the features often associated with a typical Middle Eastern mosque and revive Southeast Asian indigenous architecture (Vlatseas, 1990; Tajuddin, 2007). However, in the modern cases, they often incorporated more Middle Eastern or Mughal elements (Yeang, 1992).

In order to study Islamic architecture in Malaysia into its deeper layers, it is essential to get acquainted with different Islamic architectural styles in the country. Malaysian Mosque architecture, considering physical appearance and constructional techniques can be classified into three different styles: vernacular, colonial, and modern. Each one of these styles may include more sub-styles, which are impacted by five factors: ethnic culture, climatic condition, colonialism, technology utilization, and political environment (Ahmad, 1999). The classification can also be discussed based on temporal considerations. Based on Ahmad (1999) and Tajuddin (2007) it can be stated that the vernacular style was formed during the time before the Western colonization in the area. Vernacular style can be referred to those mosques that represent traditional ideas, in which due to the influence of domestic or foreign cultures the architectural features such as dome, *iwan* and *minaret* that are of the most predominant elements of mosque in Islamic Heartland have been altered or completely removed (Ahmad, 1999), while strong Hindu-Buddhist and indigenous Southeast Asian architectural ideas are remained (Lim, 2001). These mosques strongly express ethnic culture and craftsmanship and rely on available materials with a responsive design toward climatic changes (Ahmad, 1999; Tajuddin, 2007). The majority of colonial mosques demonstrate obvious Moorish and classic European influences, while some follow Art-deco ideas (Ahmad, 1999). These mosques mainly were built between 1795 and 1957 (Ahmad, 1999) under the colonization of Britain. Modern mosques in Malaysia can be seen in a variety of forms and constructional techniques.

These mosques built after the independence in Malaysia using modern constructional techniques, and the forms can be found in various styles such as Indian, Mughal, modernist, post-modernist, and modern vernacular styles (Tajuddin, 2007).

Prior to the modern era, regional culture and local traditions had stronger roots in architectural designs and construction techniques. As a result, an individual building could reveal a lot about heritage and artistic development of a region. Between these three architectural categories, vernacular mosques' style reveals deeper layers of Malaysian culture, its art, and architecture. These mosques are of both historical and architectural treasures in Peninsular Malaysia, which have captured the attention of the researcher.

Although the first historical evidence of Islam in Malaysia can be seen from a stone inscription with Arabic characters in Terenganu, on the east coast of the peninsula (Vlatseas, 1990), Melaka Kingdom, located in the west coast of the peninsula had a crucial role in the spread of Islam into the interior and north of this region. Melaka the centre of trade and commerce and linkage between east and west between 14th and 18th centuries (De Witt, 2010), and the starting point of Islam's development in Peninsular Malaysia (Moor, 2004), not only demonstrates the most staggering examples of Southeast Asia Mosque style, but also has progressed further and established the Melaka style movement (Chen, 1998). Vernacular mosques in Melaka, following the traditional Southeast Asian Islamic architecture do not regenerate the Islamic architecture known in Middle East or Indian subcontinent and represent their own unique identity in Islamic designs. Ascribed to the strong roots and extremely vital pre-Islamic culture in the region and the special attention to climatic conditions, vernacular mosques in Melaka have been inspired wisely from local

traditions such as indigenous Southeast Asian and Hindu-Buddhist ideas and environmental consideration for tropical climate.

1.2 Research Background

Since the end of the 20th century, many scholars with different discernments, narrations and fields of research have been intrigued by the significance, aesthetic values, and philosophical meanings of the most notable symbol of Islamic architecture: the mosques. For instance, Blunt (1976) in *"Splendors of Islam"*, Hillenbrand (2000) in *"Islamic Architecture: Form, Function and meaning"*, and Stierlin (2002) in *"Islamic Art and Architecture"* discussed and praised mosques in the Middle East, whereas they completely ignored other Islamic architectural styles across the world. Prochazka (1986) in *"Mosques"*, Al Faruqi (1986) in *"The Cultural Atlas of Islam"*, and Michell (1995) in "*Architecture of the Islamic world: Its history and social meaning"* mentioned the Southeast Asian mosques' architecture; nevertheless, they did not discuss them in details. Frishman (1994) in his regional mosque typology considerations regards Southeast Asian mosque as a special regional mosque architecture, which represents a fascinating study of the mosque architectural evolution. O'Neill (1994) in *"The mosque: history, architectural development and regional diversity"* reviewed Southeast Asian mosques from cultural, chronological, and stylistic aspects. Vlatseas (1990) in *"A history of Malaysian architecture"*, Tajuddin (2000) in *"The Architectural Heritage of the Malay World: The Traditional Mosque"*, and Nasir (2004) in *"Mosque architecture in the Malay world"* focused on mosque architecture in Peninsular Malaysia. Vlatseas (1990) narrated the history of the peninsula, providing accurate knowledge and image about its mosques' architecture. Nasir (2004) reviewed mosques' architecture in Southeast Asia, as well as Peninsular Malaysia based on temporal considerations, and Ahmad (1999) originated an

architectural classification in Malaysian mosque design considering the physical appearance and the construction methods. Tajuddin (2000) discussed mosques in Peninsular Malaysia by selecting a number of examples such as Kampung Laut and Kampung Hulu mosques and provided drawings of plans, sections, and elevations. Although Vlatseas (1990), Tajuddin (2000), and Nasir (2004) mentioned the influence of Chinese architecture in vernacular mosques in Melaka, none of them went beyond the superficial influences. Chen (1998) in *"The encyclopedia of Malaysia"* and Yeang (1992) in *"The architecture of Malaysia"* tried to give a better image on the influence of Hindu-Buddhist, as well as Chinese cultures on vernacular mosques in Melaka, but still none provided accurate and detailed image in this regard.

1.3 Problem Statement

The influence of different existing cultures and religions in a region on its architectural development and subsequently on its mosques' design is an inevitable fact (Bandyopadhay and Sibely, 2003). Through their studies on mosques in Central Omani, Bandyopadhay and Sibely (2003) realized that different tribal migration patterns and sectarian incursions in Northern Oman and the United Arab Emirates affected Central Omani mosques' forms and organizations (Othman, 2011). In a further conclusion, they supported the idea that the influence of different cultures in a region can be detected in the mosques' architectural design in that area. Malaysian architectural studies verify the notion that the influences of foreign cultures have been regenerated as some ideas in vernacular mosques and in some cases even reshaped some of the principal elements in mosque's architecture.

As mentioned earlier, even though Islam was introduced to Southeast Asia between the 13th, the 14th and the 15th centuries, yet the Islamic architecture of this region remains little known and poorly documented, because these mosques followed

local building traditions and climatic conditions and do not resemble Islamic architecture of Middle East or Central Asia (Michell, 1995). Among all the materials and records about mosques' architecture and typology, only few scholars have mentioned constructional architecture of these sacred structures in Southeast Asia. Frishman (1994), for instance in *"The Mosque: History, Architectural development and Regional diversity"* acknowledged Southeast Asian mosques as one of the seven regional mosques' typology. Michell (1995) in the *"Architecture of the Islamic World"* also discussed Southeast Asian mosques' style very briefly. Hence, the scantiness of materials about Southeast Asian mosques' style, its development, and various influences from foreign cultures is evident.

The initial perusal on available records about Southeast Asian traditional mosques indicates the profound influence of Hindu-Buddhist architecture on these specimens (Yeang, 1992; Chen, 1998). Southeast Asian architecture has adopted certain features from Hindu-Buddhist architecture, absorbed them, and developed its own unique architecture, which illustrates a reflection of Hindu-Buddhist architecture besides the indigenous architecture of Southeast Asia (Yeang, 1992; Chen, 1998; Tajuddin, 2000; Nasir, 2004). Melaka style mosques also follow this architectural style and show strong Hindu-Buddhist characteristics in form and indigenous Southeast Asian techniques in construction (Lim, 2001). However, in contrast to other counterparts in Southeast Asia, these mosques exhibit signs of Chinese architecture features.

1.3.1 Gap of Knowledge

Among all materials and records about vernacular mosques in Melaka, there is a significant paucity respecting the influence of Chinese architectural characteristics on these examples. Chen (1998) in *"The Encyclopedia of Malaysia: Architecture",* paid

attention to Architectural styles and developments in Malay world and discussed Melakan Islamic architecture in details; however, the discussion was too brief. The strong signs of Chinese architectural elements in vernacular mosques in Melaka drew this research's attention to Chinese architectural influences on Melakan mosques' style.

1.4 Research Question

This research attempts to answer the following question:

"What are the special characteristics of Chinese Architecture that influence the Melaka style mosques architecture?"

1.5 Research Aims and Objectives

This research aims to understand vernacular Melaka mosques' characteristics. In addition, this study intends to conduct an overview on Classical Chinese Architecture both in Mainland China and Peninsular Malaysia. The key objectives of this research are as follows:

- To identify the general characteristics of Chinese Architecture.
- To investigate special features of Chinese Architecture that exists in Peninsular Malaysia.
- To establish influence of Chinese Architecture in Melaka mosques.

1.6 Scope of the Study

Prior to the modern era, when regional culture and local traditions still had strong roots in architectural designs and constructional techniques, an individual building could reveal a lot about traditional heritage and artistic development of a region. Consequently, it is logical to expect vernacular mosques' style in Peninsular

Malaysia to reveal hidden stratum of Malaysian culture, its art and architecture. Bearing in mind the research question and objectives, the scope of this study includes historical, as well as architectural domains. Although some of the data was obtained from fieldwork and lure, most of the data was gained by studies conducted in the Main Library and Built Environment Library of University Malaya. Furthermore, the databases accessible from the Main Library were searched for more relevant available materials and data. In addition, Google Scholar was used to acquire more pertinent materials. National Library of Malaysia, Kuala Lumpur Library, Malaysian National Archive, Melaka Islamic religious Department's archive, PERZIM and Melaka Historic City Council's archive are of other data sources by which this research has enriched its literature review section.

Of the most predominant and essential architectural examination in this study are those that have been conducted in Melaka on the field works. Six vernacular mosques in Melaka have been selected as samples, which demonstrate foreign cultural integration and assimilation. These mosques bear Hindu-Buddhist, Chinese, and European architectural ideas and elements, alongside the Islamic and indigenous Malay features and characteristics.

This research intends to analyse vernacular mosques in Melaka through various aspects such as ornamentation, material, proportion, form and fenestration. However, due to limitations and lack of equipment, the researcher was not able to develop accurate measurements on roofs and minarets. As a result, it was impossible to examine some of the most important architectural features of the mosques in proportional terms. Of other limitations within this study is the scantiness of sources and relevant data. There are some related materials that are in Malay or Chinese language and not understandable for the author. Moreover, two case studies (Kampung

Hulu and Kampung Keling mosques) were under renovation since January 2013 and there was no possibility to access inside the mosques in order to provide accurate inner measurements for plan drawings.

1.7 Research Method

In this research to justify the idea that vernacular Melaka mosque style has been influenced by Chinese architecture and to detect these influences, Historical-Comparative Research Method has been applied. This study employs a historical and architectural research by using a comparative analysis of Classical Chinese architectural characteristics in Mainland China and Peninsular Malaysia, as well as selected vernacular mosques in Melaka as case studies. Seeking the answer for the research question required different stages: searching for evidence, collecting and organizing the evidence, evaluating it and constructing a narrative (Nueman, 2003). Figure 1.1 shows the diagram of different steps in Historical-Comparative Research method.

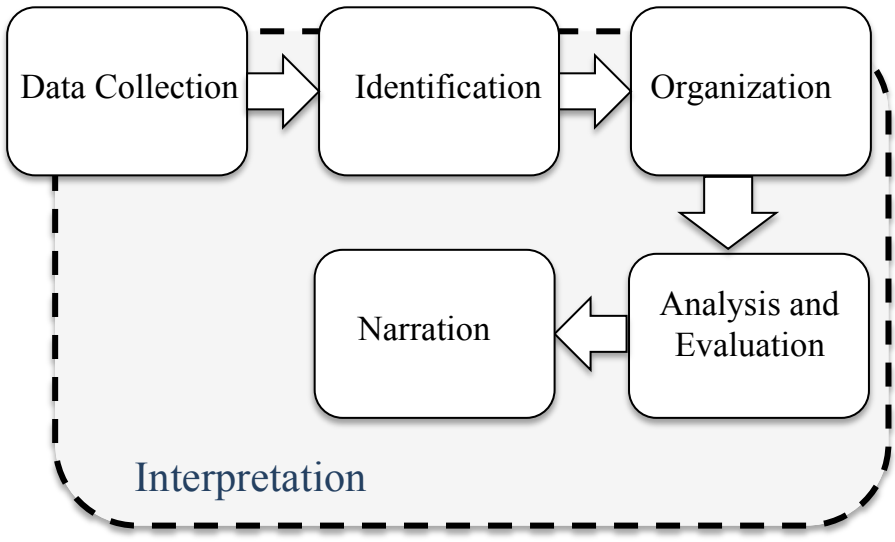


Figure 1.1: The Diagram of Historical-Interpretive Research Method (As it is shown "Interpretation" exists in the whole time of process)
Source: Groat and Wang, 2002

In order to fill the gap of knowledge, several literature studies carried out on various historical and architectural books, journals, Master's dissertations and PhD thesis in different libraries. The first stage of data collection concerns the historical and architectural background of Southeast Asia from the early days until the modern era. Second section of literature review concerns Classical Chinese Architecture both in Mainland China and Peninsular Malaysia. In order to make the comparison and analysis possible, six vernacular mosques in Melaka have been chosen as case studies to obtain primary data. The use of case studies and qualitative data in a historical-comparative research made the study a thorough investigation of a limited number of samples in which meaning and context are crucial (Nueman, 2003). The study on these selected mosques can also enhance historical documentation (Nueman, 2003).

To answer the research question and achieve the research objectives, and based upon the research methodology, this study is carried out through following steps. Further explanation for each step is provided in the "Chapter Four: Methodology".

Step 1: Literature Review (Southeast Asian Historical and Architectural Background, Classical Chinese Architecture in Mainland China and Peninsular Malaysia)

Step 2: Vernacular Melakan Mosques Identification

Step 3: Site Visit and Field Work

Step 4: Identification and Organization

Step 5: Findings Comparative analysis and Interpretation

Step 6: Narration

1.8 Research Structure

Chapter 1: The Introduction Chapter in this study contains several sections: Background, Problem Statement, Research Question, Aims and Objectives, Scope of the Study, Research Method, and Research Structure.

Chapter 2: The first phase of this research's Literature Review provides a historical and architectural background of Southeast Asia, which includes the Austronesian heritage and its architectural characteristics, Indians and Chinese Interactions with the Malay world and their distinctive architectural influences on this region's architecture, the advent of Islam and vernacular Islamic architecture in Southeast Asia, and finally, the Melaka Kingdom era and its architectural characteristics.

The evidence provided in this chapter lead to a rigorous comprehension on mosques' architectural characteristics in Southeast Asia, and subsequently in Melaka. The latter has been enriched by primary data collection on six selected vernacular Melakan mosques.

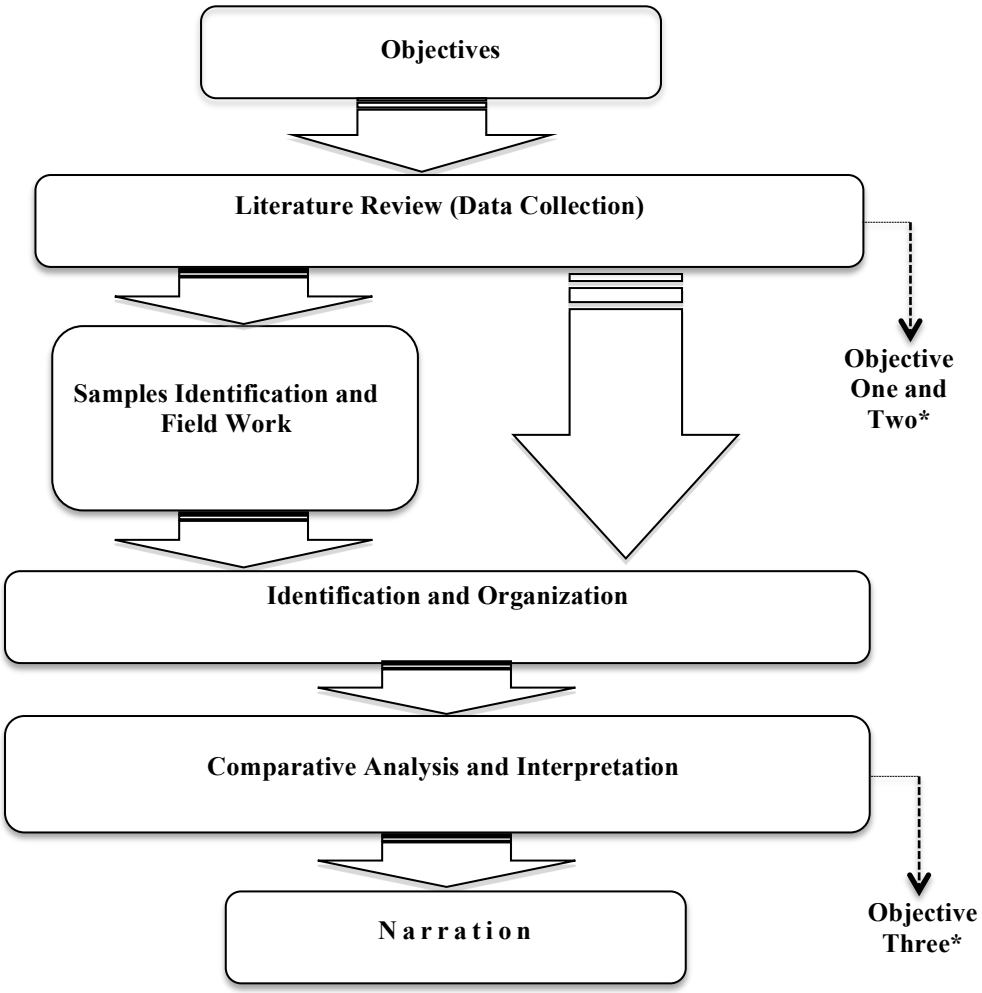
Chapter 3: The second phase of this study's Literature Review is divided into two sections. First Classical Chinese Architecture in Mainland China covers Chinese architecture from various points of views, such as special characteristics, different typology, and Southern Chinese architecture. Second section focuses on Classical Chinese architecture in the Peninsula, which is practiced in the area over centuries by Chinese merchants and later by migrants. A brief discussion on historical contacts between Chinese and Melakans enriches this section and imparts a better apprehension on Classical Chinese architecture in the Peninsula.

Chapter 4: This chapter presents a detailed description of the applied methodology to fulfill objectives of the study and finally to answer the research question. The chapter describes different steps of the study and the adoption of a specific method for each stage. Research design, data collection, organization and analysis methods, library research and field work as the source of data, and finally different Historical-Comparative Research strategies are elucidated in this chapter.

Chapter 5: This chapter focuses on selected vernacular mosques in Melaka. Six vernacular mosques as case study are introduced and described thoroughly in this section.

Chapter 6: In this chapter, a comparative analysis of primary and secondary evidence is presented. This chapter presents research analysis, evaluation, comparison and interpretation, by which the influences of Chinese architecture on Melakan mosques' style are recognized, classified and presented. The comparisons between data collected from the Literature Review and Fieldworks unveil interesting results in order to answer the research question.

Chapter 7: In this chapter, the conclusion and recommendations are elaborated. Figure 1.2 and 1.3 illustrate research design and the relationship between research objectives and dissertation chapters respectively.



Objective 1: To identify the general characteristics of Chinese Architecture.

Objective 2: To investigate special features of Chinese Architecture that exists in Peninsular Malaysia.

Objective 3: To establish influence of Chinese Architecture in Melaka mosques

Figure 1.2: The Diagram of Research Design

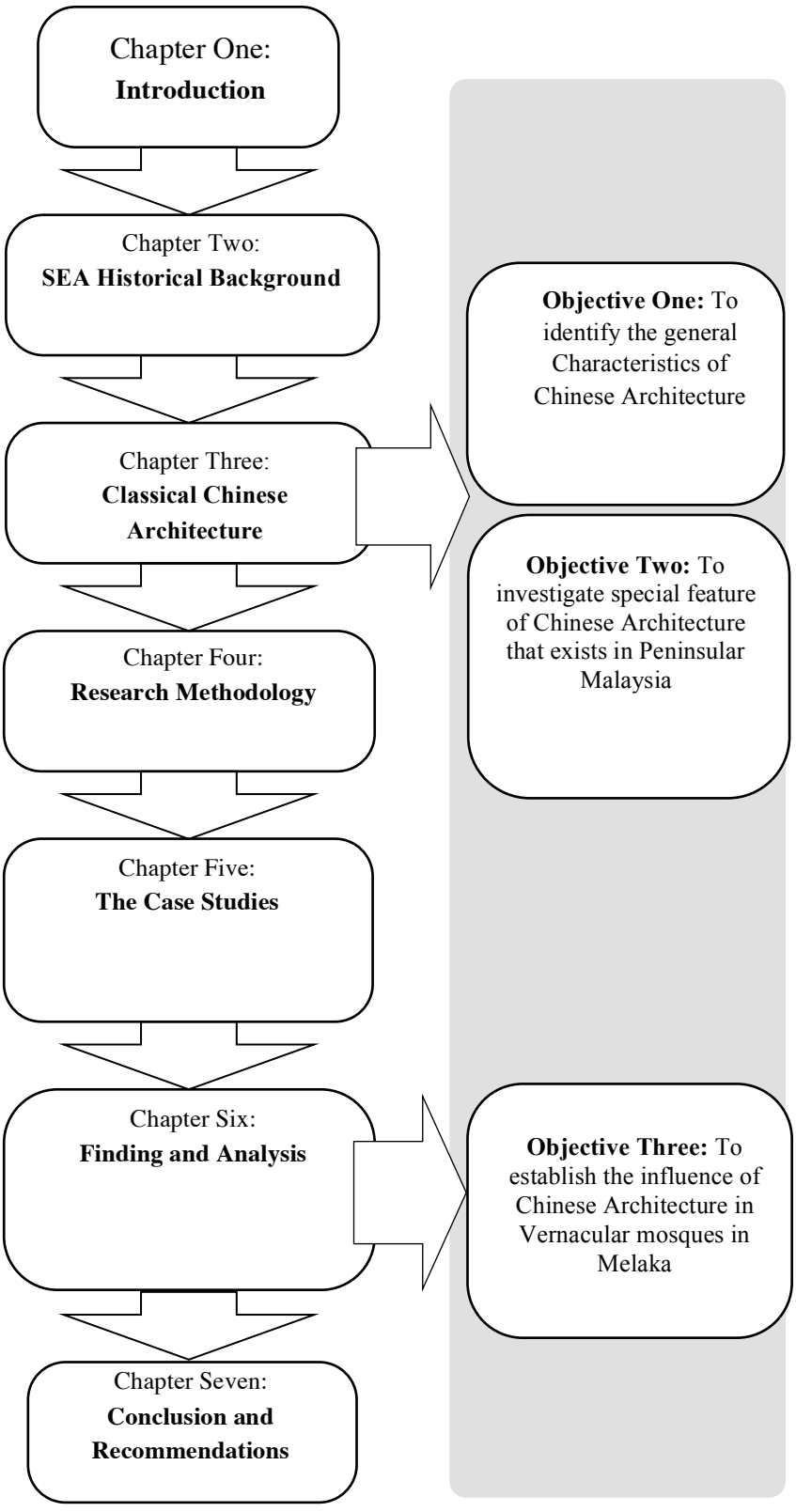


Figure 1.3: The Relationship between Research Chapters and Objectives

CHAPTER 2

SOUTHEAST ASIA HISTORICAL AND ARCHITECTURAL BACKGROUND

2.1 Introduction

To analyse the characteristics of Melaka mosque architectural style and architecturally understand various influences from different cultures, a historic study over this port is essential. However, recorded historical documents about Melaka lead us not further than Melaka Kingdom era in the 15th century, thus this Chapter (first section of Literature Review phase) mainly focuses on historical and architectural background of Southeast Asia in general to get access to the earlier history of the region. There is no doubt that a historical review on Southeast Asia makes it possible to attain a better comprehension on how and why its traditional architecture has become what it is discerned today as Southeast Asia traditional architecture. This part of literature review leads to an understanding of Southeast Asia architectural evolution and is an introduction to further studies about Melaka architecture.

Discussions in this chapter include the Austronesian heritage and its architectural characteristics, Indians interactions with Southeast Asia and Hindu-Buddhist architectural influences on Southeast Asian architectural language, and the advent of Islam followed by a brief overview on Southeast Asia traditional mosques architecture in order to gain an overall understanding on vernacular mosques design in the region. Finally the Melaka Kingdom period and its architectural development, different Malay architectural typologies and Malay vernacular mosques are discussed thoroughly to build a strong foundation for further studies and analysis.

2.2 Heritage of Austronesian Vernacular Architecture

Austronesians, the descendants of whom formed the basic population of the Malay Archipelago were the last group of various ethnic immigrants who reached this region from mainland of southern China (Blust, 1976). Before Austronesian's migration to the archipelago, the native groups who lived in this region were Veddoid, Negritos and Papua-Melanesian, which possessed a nomadic hunting and gathering lifestyle (Munoz, 2006). The word Austronesia pertains to the regions where Austronesian languages are spoken and encompasses about one-fifth of the known languages in the world (Bellwood, 1978). Austronesian languages family is one of the largest and the most widely spread language families in the world with a distribution extending more than half way around the globe, from Easter Island in the eastern pacific to Madagascar off the southeastern coast of Africa and now are spoken by an estimated 270 million people (Blust, 1976). Figure 2.1 illustrates the realm of Austronesian language family.

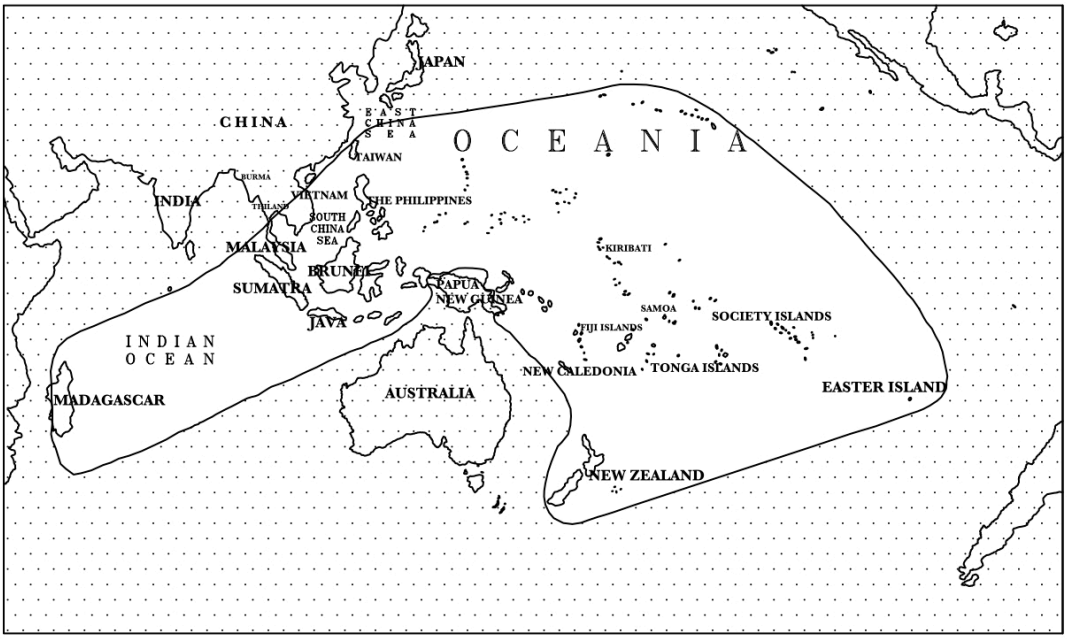


Figure 2.1: Limits of the Austronesian Language Family
Source: Drawn by Author Source from Waterson, 1990

Archaeological evidence suggests that the ancestors of the Austronesians were the agricultural settlers, spread from the Southern coasts of Chinese mainland to Taiwan at some time between 4500 and 4000 BC and from this homeland started a great migration to the south to Philippines between 3000 and 2500 BC, followed by movements to Borneo and Sulawesi, prior to 1000 BC they reached Sumatra, Malaya and Vietnam (Bellwood, 2006). Archeological evidence verifies that the Austronesians used large ships for their distance shipping as early as the 1st century AD, which were at least 200 tons and carried hundreds of passengers (Munoz, 2006).

The indigenous Malay people had a culture from combination of Austronesians and native groups who lived in this region prior to Austronesian's great migration. They were dependent on the jungle, as well as the sea in order to provide for the living (Lewis, 1995). Since the soil of this region is not very productive and the harsh seasonal monsoon makes the cultivation of crops impossible, the indigenous Malay people needed to rely on trade (Shah, 1988). By the 3rd century AD, Malay shipping had a crucial role in trade system of the Straits between the great civilization of India and China (Lewis, 1995). *"Over the centuries many ports flourished along the coast of the Straits and gained great wealth, thus the port-city became basic to the political structure of the Malay world"* (Lewis, 1995, p.3).

The evanescent nature of main material (timber for main structure, attap and palm leaves for roof, woven bamboo for walls and mud as plaster) used by the Austronesian made it hard for archaeologists to reassemble their structures; however, some findings have enabled experts to penetrate deep into some physical characteristic of Austronesian traditional architecture (Chen, 1998). The most prominent of these physical characteristics is the pile foundation or the raised floor supported by timber piles or stilts (Waterson, 1990). Generally these timber piles are of the height that makes the space below the floor suitable for human or animal use; however, in some

cases these timber piles are very low that makes the space below the floor suitable only for ventilation purpose, while in some other cases these stilts are extremely high (Chen, 1998). This space is not only used as a defense against flood, animal, insects and evil spirits, but also increases ventilation through the spaces between floor-boards (Beamish and Ferguson, 1985).

Elaborated carpentry and decorative features that are found on the woven wall panels, and on the carved wooden fascia board under eaves, and the roofs are of the most distinguishable characteristic of Austronesian architecture (Beamish and Ferguson, 1985). Austronesian buildings were built to be movable, led to a unique construction; *"only timber dowels and wedges were used without any nails or bolts in joints"* (Beamish and Ferguson, 1985, p.17). Another distinctive feature of Austronesian indigenous architecture is saddle-backed roof with the ridge-line extends beyond the gable walls often resulting in outward-sloping gable-ends, as well as the decorative gable-finials in the form of crossed horns, which may be formed simply from extensions of the rafters, which may be elaborately carved (Waterson, 1990).

Austronesian linguistic experts have reached very interesting conclusions in their studies, which give more support to the existence of mentioned architectural elements in vernacular houses in Southeast Asia (Waterson, 1990). The reconstruction of Austro-Thai language encompasses some terms such as platform, house post and ladder/steps leading up to the house (Waterson, 1997), and also reconstruction of Malayo-Polynesian language subgroups includes terms such as ridge-pole, rafter, thatch, house post, storage rack above the hearth, notched log ladder, and public building (Blust, 1976). Both these linguistic reconstructions verify the fact that the people who spoke these languages and lived in these houses were acquainted with mentioned architectural terms and used them in their buildings. Figure 2.2 illustrates a collection of Austronesian vernacular houses.

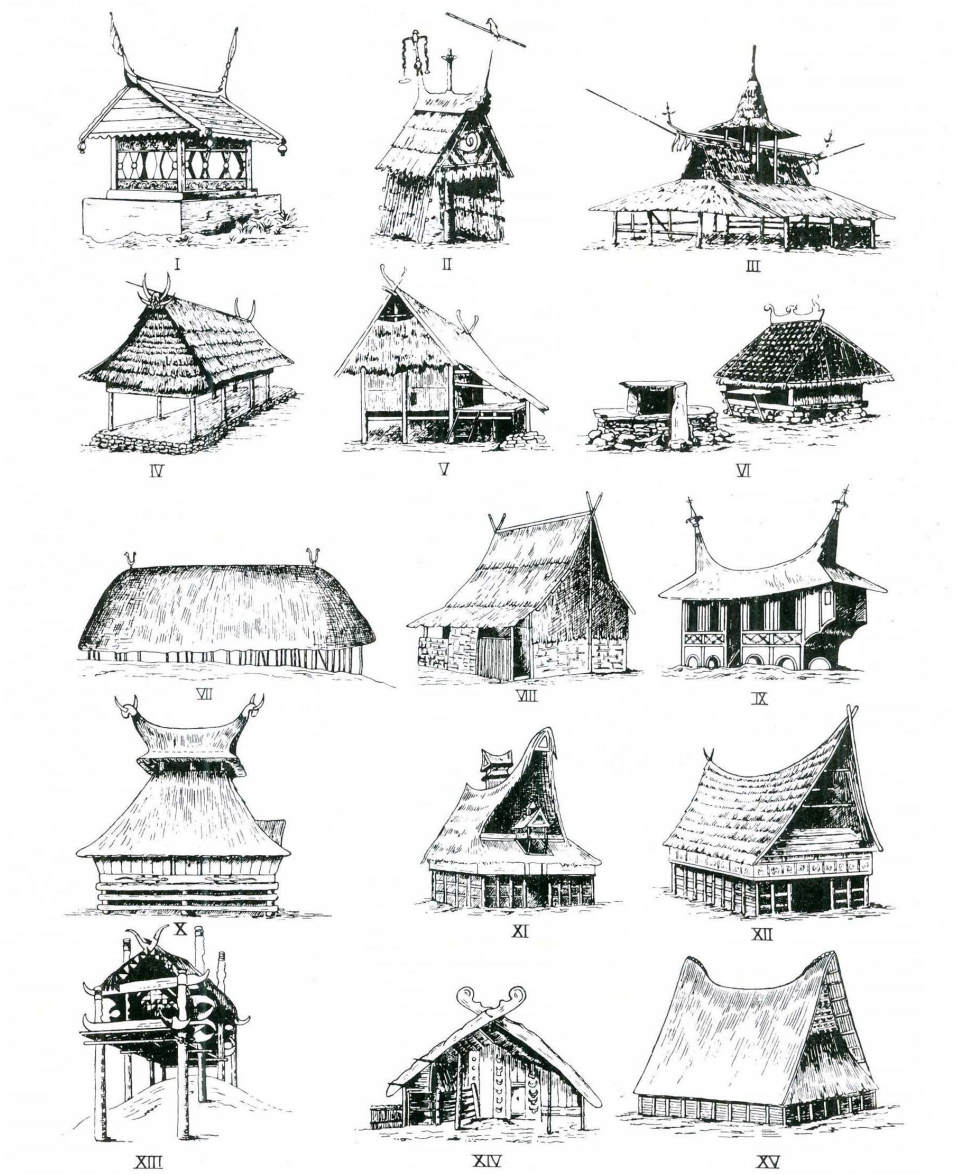


Figure 2.2: A collection of Austronesian Vernacular Houses
Source: Waterson, 1990

2.3 Hindu-Buddhist Architecture in Southeast Asia

Among the sea-faring people of India, Southeast Asia was known as the land of gold, so Indian traders were sailing to these lands from at least the 6th century BC (Harrison, 1967). The archeological findings in coastal settlements along the Melaka Straits indicate that these ports were in regular trade contacts with India, long before the spread of Indian culture into the region (Munoz, 2006). Commerce activities between India and Southeast Asia were greatly intensified during the first three

centuries AD; as a result, limited trading settlements of Indian merchants were founded at suited trading centres such as Kedah, which gradually developed in wealth and solidarity (Harrison, 1967; Ryan, 1971).

Indians, who sailed overseas to Southeast Asia brought with them the ideas, beliefs and practices of Hinduism and Buddhism (Harrison, 1967). However, the Austronesians were more active in spread of Hindu-Buddhist culture in Southeast Asia; Austronesian rulers could choose and integrate the features of Indian culture, which were consistent with either their believes or their economic and political goals, while rejecting the others (Munoz, 2006). The influence of Hindu-Buddhist culture did not fundamentally changed the practices and beliefs of Southeast Asian people, as the animism, ancestor-worship, village democracy, and local agricultural rituals always valued more than imported cults, yet Indian influence did bring an enrichment of their original culture by the introduction of the new religious and artistic ideas (Harrison, 1967; Ryan, 1971). In other words, the Indian cultures profoundly blended with Southeast Asian indigenous heritage in a way that both traditions preserved (Ryan, 1971).

From the beginning of the Christian era until the 14th century numerous indigenous Buddhist or Hindu kingdoms raised in Southeast Asia (Munoz, 2006). These Hindu-Buddhist kingdoms such as Srivijaya in 7th- 13th century, which was a Buddhist kingdom, and Majapahit in 13th-15th century a Hindu kingdom had a profound role in the absorption, adaptation and integration of Indian cults into the Southeast Asian people lives and traditions (Ryan, 1971).

The majority of early commercial contacts with India were held in western coasts of Peninsular Malaysia along the Melaka Straits; as a result, these ports had a major role in spreading of Hindu-Buddhist cultural influence beyond the enter-pots

where the connection with foreigner was occurred (Andaya, 2001). Thus, Malay Archipelago became an important centre of Indian cultural influence between the 4th and 14th centuries, which was mainly Buddhist in essence (Vlatseas, 1990). Archeological discoveries of Sanskrit stone engraved and Buddhist images in the western coast of the Peninsula verifies the fact that these ports in the Straits of Melaka were the focal points of the trading connection between southeast Asia and India (Andaya, 2001). Over time, elements of Indian culture, cosmology in particular, increasingly became significant in the belief system, settlements, art and architecture of the Southeast Asia people (Aasen, 1998).

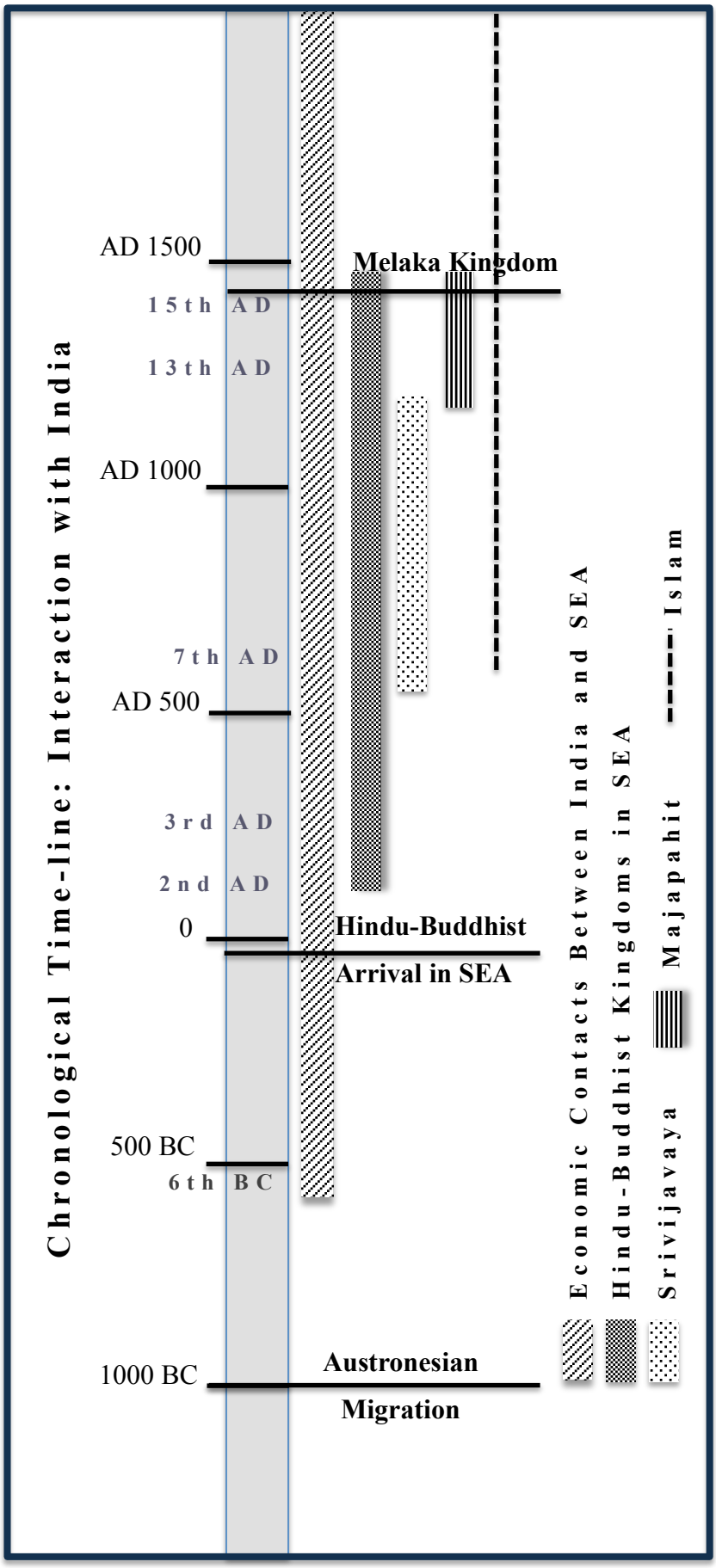


Figure 2.3: Chronological Time-line: Interaction with India
Source: Derived from Harrison, 1967; Rayan, 1971; Vlatseas, 1990; Andaya, 2001; Munoz, 2006

As Southeast Asian lands were brought into contact with Hindu and Buddhist cultures, its architectural methods and styles gradually changed (Ryan, 1971). The Indian architecture managed to influence and reform Southeast Asian architecture over centuries, except for the northern parts of Laos and Vietnam where were under strong political and cultural domination of China (Bussagli et al., 1973). The spread of major Indian religions to Southeast Asia during the first centuries of the Christian era caused in the construction of numerous Hindu or Buddhist temples, which had to reconcile three requirements; religious ceremonial demands; religious statuary; particular symbolism (Dumarcay, 1986).

Hindu-Buddhist architectural forms and elements were strong in the region from the early centuries AD until the 14th century due to the strong government of Hindu-Buddhist kingdoms (Nasir, 2004). The Hindu-Buddhist structures in Southeast Asia are classified into two fundamental types: the candi (the mausoleum or tomb temple) and the true shrine (meru tower) (Bussagli et al., 1973). The whole plan of a Buddhist temple's main building is based upon the ancient Indian conception of the structure of the universe (Yean, 1990). The essential feature of this cosmology were a central mountain called Meru above which was the home of the gods, a surrounding ocean, and an enclosing wall of rock (Harrison, 1967). While a Hindu temple was erected to be a reminiscent of the form of human body lying on its back with the head towards the west and feet to the east (Chen, 1998). The meru tower or the tower of offering *"comprises a raised box-like altar containing statue and topped by high, multiple-tiered roofs, often surrounded by pillars placed on a masonry foundation"* (Dumarcay and Smitties, 1998, p.84). Figure 2.4 illustrates different candis in Indonesia.

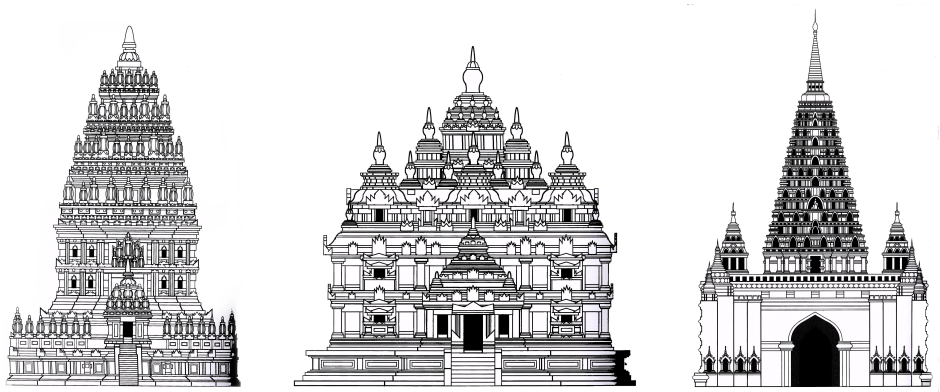


Figure 2.4: Different Candi Design in Southeast Asia
Source: Bunce, 2002

Most of the archeologist and scholars who excavated and studied Hindu-Buddhist architecture in Southeast Asia focused mainly on Indonesia, Cambodia, Borneo, and Vietnam, while there are a few who including Malay Peninsula in their studies. According to Chinese historical documents, there were several small indigenous Hindu-Buddhist Kingdoms in the Peninsula who had to struggle for their independence with strong kingdoms, such as Fu-nan and Srivijaya (Chihara, 1996). These kingdoms, mainly in Kedah (western coast of Peninsula), Pattani (eastern coast), and Tun-sun (north of Peninsula) (Wales, 1976) were Buddhist until the 7th century when Hinduism started to spread its strong influence in the region (Chihara, 1996). Through archeological excavations on the remainders of the temples in the Peninsula it is postulated that these structures were square cella raised on a simply compacted base with supporting pillars below the roof (Dumarcay and Smitties, 1998). Figure 2.5 shows an attempted reconstruction of an Indian temple in Peninsula.

Southeast Asian architecture, which developed during the prolonged period prior to advent of Islam, shows strong Hindu-Buddhist influence that still possesses its own identity, unique local characteristics and technology. Due to the strong

Austronesian traditions and common regional features in Southeast Asian buildings, its architecture is distinguishable from Indian architecture found in the Indian sub-continent (Meyer, 1965). An interesting difference is that Southeast Asian Hindu-Buddhist temples commonly dedicated to kings or holy men, in contrast to the Indian tradition that a temple must be dedicated to the gods (Yeang, 1992).

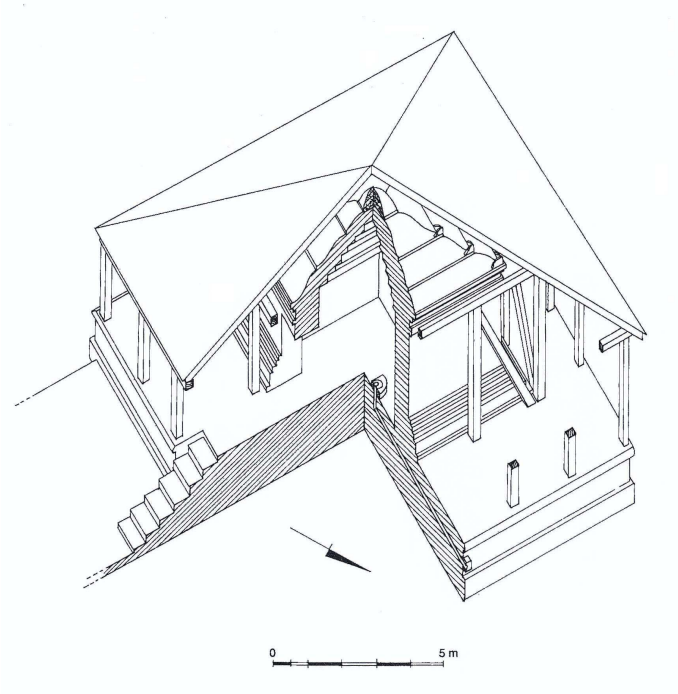
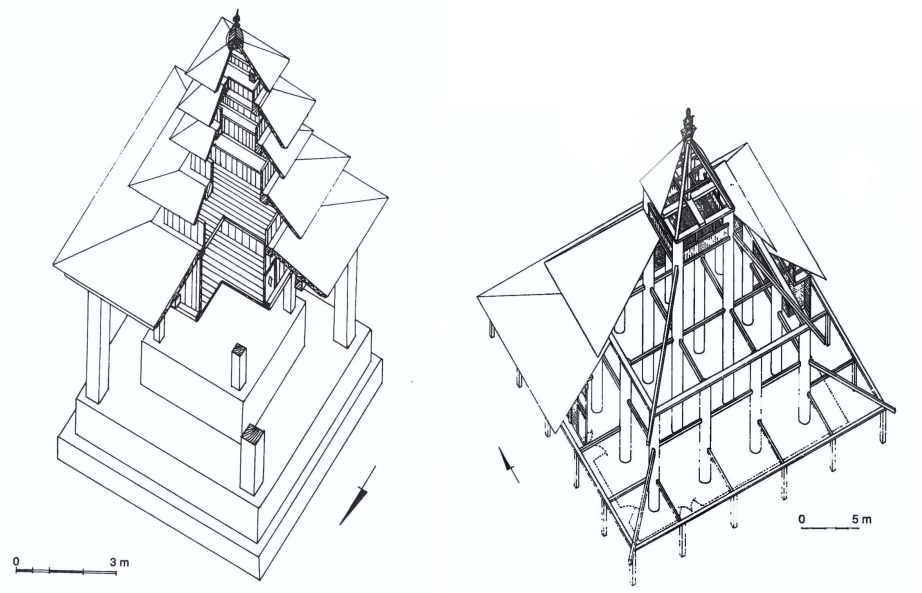


Figure 2.5: Candi Bukit Batu, Kedah
Source: Dumarçay and Smithies, 1998

The fall of the Majapahit Kingdom and the foundation of Melaka Kingdom at the 15th century marks the beginning of the Islamic period in Southeast Asia that brought to an end all Hindu and Buddhist construction in the region (except for the island of Bali) (Dumarcay and Smitties, 1986). However, Southeast Asian architecture still reveals many indigenous Hindu-Buddhist architectural features and ideas. For instance, the meru or pyramidal roof, common in Southeast Asian traditional mosques, is an inspiration from Hindu-Buddhist sacred architecture (meru tower) (Tajuddin, 2000). Figure 2.6 provides a comparison between a meru tower in Bali and a traditional mosque in Demak.



(a) **(b)**

Figure 2.6: a) meru tower at the temple of Mengwi, Bali b) reconstruction of original form of Demak mosque, Indonesia (roof of Demak mosque obviously resembles meru tower roof design)
Source: Dumarçay and Smithies, 1998

Moreover, the application of the square plan in Islamic architecture in Southeast Asia is driven from the Mandala or the magic square. In iconography of the architectural plans, the Mandala refers to a successive series of numbers within a square form, in which the sum of any row of numbers in any direction is the same (Bunce, 2002). The Mandala, initially originated in ancient China but has developed and reached its highest sophistication in Hindu-Buddhist architecture in India (Bunce, 2002). The Kampung Hulu, Kampung Keling, and Tranguerah mosque indicate some applicability with various variations of Mandala, such as Manduka Mandala, Paramashayika Mandala, and Upapitha Mandala, which are of the later and more expanded practices in Hindu-Buddhist architecture (Bunce, 2002).

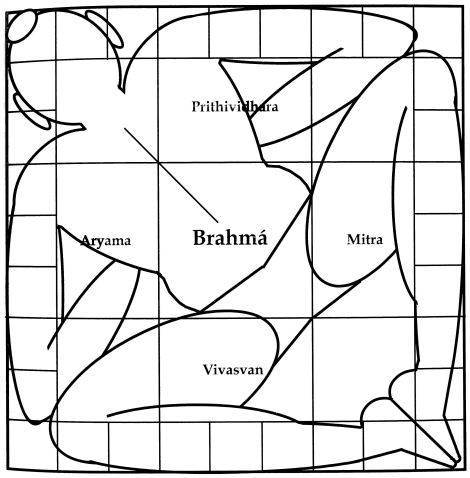


Figure 2.7: Vastu-Purusha Mandala
Source: Bunce, 2002

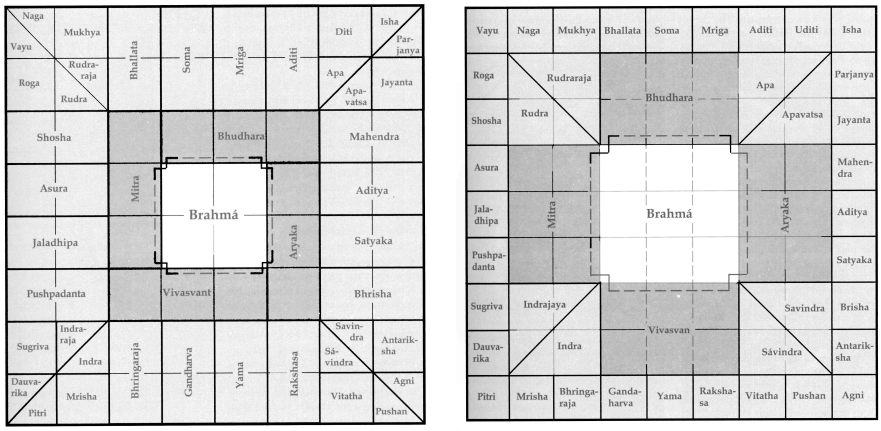


Figure 2.8: a) Manduka Mandala b) Paramashayila Mandala
Source: Bunce, 2002

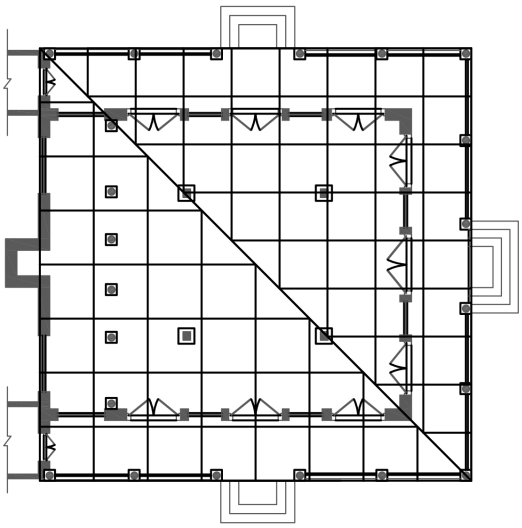


Figure 2.9: Kampung Hulu Mosque, Indicating Manduka Mandala and Paramashayika Mandala
Source: Drawn by Author source from Bunce, 2002

In Peninsular Malaya, the majority of the Buddhist temples' remainders are found in south Kedah, which included Candi Bukit Batu Pahat (Yeang, 1992). The Hindu Sri Markendeshvara Temple in Penang is a good example of pure Indian Architecture in Peninsula while Sri Poyatha Moorthi temple is the oldest intact Hindu temple in Melaka (Chen, 1998).

2.4 Southeast Asia Vernacular Mosque Architecture

Although it is impossible to identify when and where Islam started its influence and established its strong root in Southeast Asia, the presence of Arab Muslim traders in the region soon after the advent of Islam in Middle East have been verified, thus Islam was known in Southeast Asia since the mid-7th century (Al Faruqi et al., 1986). However, for many centuries Islam did not developed and spread in Southeast Asia, as the region were ruled under the strong influence of Hindu-Buddhist kingdoms. The first recorded document on the presence of Islam in the region goes back to the 13th century when the Italian merchant, Marco Polo visited a port of Perlak, Acheh in Sumatra and its already Muslim ruler (O'Neill, 1994). Also the first documented evidence of the presence of Islam in Peninsular Malaysia goes back to the discovery of Arabic inscriptions on an engraved stone in eastern coast of Terengganu, which is dated back to the 14th century (Gordon, 2001).

There are different speculations about how Islam was introduced to Southeast Asia. Rauf (1987) explains that Islam came to Southeast Asia in two successive stages; first in an unplanned, slow and irregular process formed by Arab and Indian Muslim merchants, who came to the region for commerce activities, and second through vast migration of Muslim refugees from Middle East due to the civil wars and rebellions during the Abbasid Dynasty and also Crusaders' and Mongol's invasions (Rauf, 1987). While Ryan (1971) elucidates that Islam, like the earlier foreign religions in Southeast

Asia, was introduced to the region by Indian Muslim traders and missionaries rather than Arab Muslims (Ryan, 1971). *"This is an important fact to remember when examining the reasons for the preservation of old traditions in Malay Muslim society; Indian devotees of Islam although eliminated the material and concrete examples of Hinduism but did not eliminate its most abstract influence"* (Ryan, 1971, p.14). As a result, Islam was embraced by Southeast Asian people in harmonious and peaceful means rather than by conquest.

Foundation of Melaka was a significant stage in establishment of Islam in the Malay world. Islam came to Melaka from North Sumatra when Sultan Muzaffar Shah married a Muslim princess from Pasai (North Sumatra) and soon after Islam became the state religion of Melaka (Ryan, 1971). Thenceforth, many embraced the new religion that was not accepted by all before and as the port grew to an empire, Islam managed to penetrate deeply into Melakan culture (Andaya, 2001). The powerful Muslim Melaka kingdom linked Southeast Asia into Islamic lands by attracting a great scale of Muslim merchants from Middle East and Indian sub-continent. Melaka took advantage of Majapahit empire decline to establish its supremacy over Malaya and several Sumatran states, and become the largest Muslim trade centre in the region (Moorhead, 1957). As a result of its great strength and domination, it could rapidly spread Islam into not only Java but also the whole archipelagoes. Followed by the establishment of Islam in Malay world numerous mosques were erected throughout the region. These early mosques are identified as Southeast Asian traditional mosques.

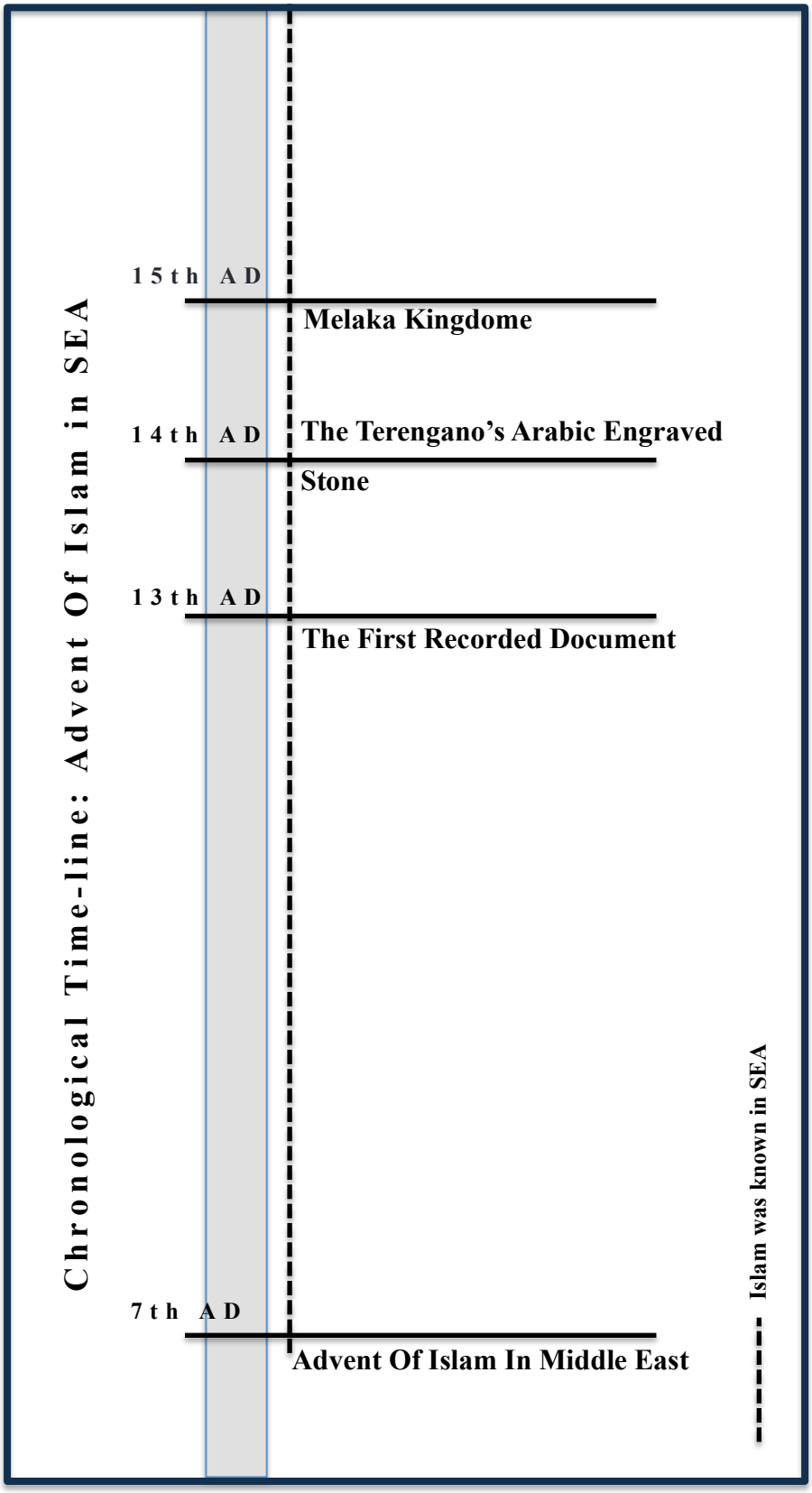


Figure 2.10: Chronological Time-line: Advent of Islam in SEA
Source: Derived from Rayan, 1971; O'Neill, 1994; Andaya , 2001; Gordon, 2001

As mentioned earlier, although Islam was completely known in Southeast Asia since the 15th century and numerous mosques were erected all around the region, its Islamic architecture still remains little known and poorly documented (Michell, 1995). Probably because Southeast Asian traditional mosques have followed local building traditions and climatic conditions (Chen, 1998) instead of replicating the typical Islamic features from Middle Eastern or Indian subcontinent architecture (Ahmad, 1999). Although these mosques did not adopt distinctive forms, techniques or decoration from Middle East (Michell, 1995), they still retained some of the basic elements of their distant predecessors (Chen, 1998).

Since the advent of Islam, different mosque's designs have evolved in different regions throughout the world, and created a variety of styles that led the scholars into different mosque typological determinations. Among all the materials and records about mosques typology, there are few reports that have mentioned Southeast Asian mosques architecture, such as Porschazka (1986) and Michell (1995). Between these scholars, Frishman (1994) has classified mosque design and style into seven different regional typologies; the Arabian Heartland, Spain and North Africa, the Saharan West Africa, Iran and Central Asia, the Indian subcontinent, Anatolia, China and finally Southeast Asia (Frishman et al., 1994). Frishman (1994) in his regional mosque typology considerations regards Southeast Asia mosque as a special regional mosque architecture, which represents a fascinating study of mosque architectural evolution. Figure 2.11 illustrates Frishman's regional mosque typology.

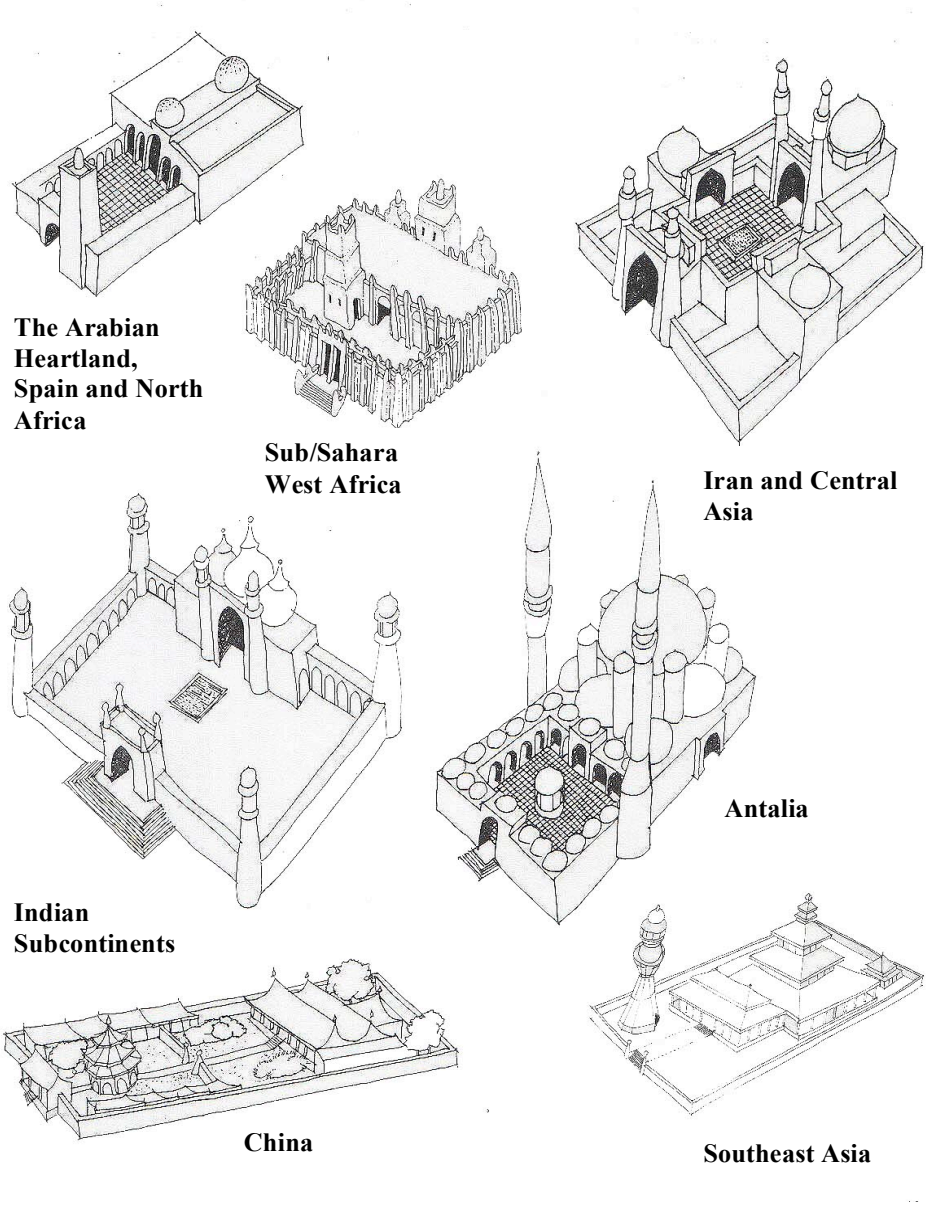


Figure 2.11: Frishman's Regional Mosques Typology
Source: Frishman et al., 1994

The earliest mosques in Southeast Asia were either reused buildings within royal courts or small prayer halls built in recent converted villages, and replicated on existing building types used for a similar sacral purpose (O'Neill, 1994). The earliest traditional mosques were followed Southeast Asian house design (Nasir, 2004), but due to limitation of space and extension, as well as the orientation issues, the adoption and modification of Hindu-Buddhist temples and shrines typologies into mosques spread throughout the region and lasted until the common era. Moreover, following the

Austronesian traditions, earliest mosques in Southeast Asia were timber constructions, with wide openings in walls, eaves and roof overhangs, which were more suitable for climatic condition of the region (Chen, 1998).

Figure 2.12: Demak Mosque, Central Java, 18th
Source: Rahman, 1998

Although certain adjustment were introduced into Southeast Asian traditional architecture to redesign them based on a mosque's functional requirements, these adjustment did not fundamentally change the indigenous architectural characteristics of Southeast Asian architecture (Michell, 1995). Just as Hindu-Buddhist architecture ideas from India, which had been filtered through Southeast Asian indigenous culture and architecture (Chen, 1998), Islamic architecture from Middle East did not fundamentally affect the traditional architecture of this region where basic Austronesian and Hindu-Buddhist morphologies have remained (Gunawan, 1998). For instance, the Austronesian tradition of using timber and method of construction was still strong in the early mosques in Southeast Asia. Furthermore, as mentioned earlier, many Hindu-Buddhist architectural features continued to exist in Southeast Asian traditional mosques, such as the meru or pyramidal roof, which is the common roof

applied in Southeast Asian traditional mosques and is derived from Hindu-Buddhist sacred architecture (Tajuddin, 2000).

Although traditional mosques, erected throughout Southeast Asia, demonstrate various variations in overall plan, roof form, composition, proportion, scale and decoration, exterior wall treatment, and materials, they also show some distinctive shared characteristics. Basic square plan for the centralized columned prayer hall raised above the ground on stilts, centralized tiered pyramidal roof, ceremonial gateway (Usually in two types: the split portal and the lintel gate), absence of minaret (in some case, traditional drum replaced minaret to functions as the calling prayers), additional terrace at the front of the building, and an outer colonnade are of the most distinctive characteristics of Southeast Asian traditional mosques (Chen, 1998). Of the best and oldest preserved examples of Southeast Asia traditional mosques are Demak Mosque and Banten mosque both in Java, which have been renovated several times since the first construction (Chen, 1998; Nasir, 2004).

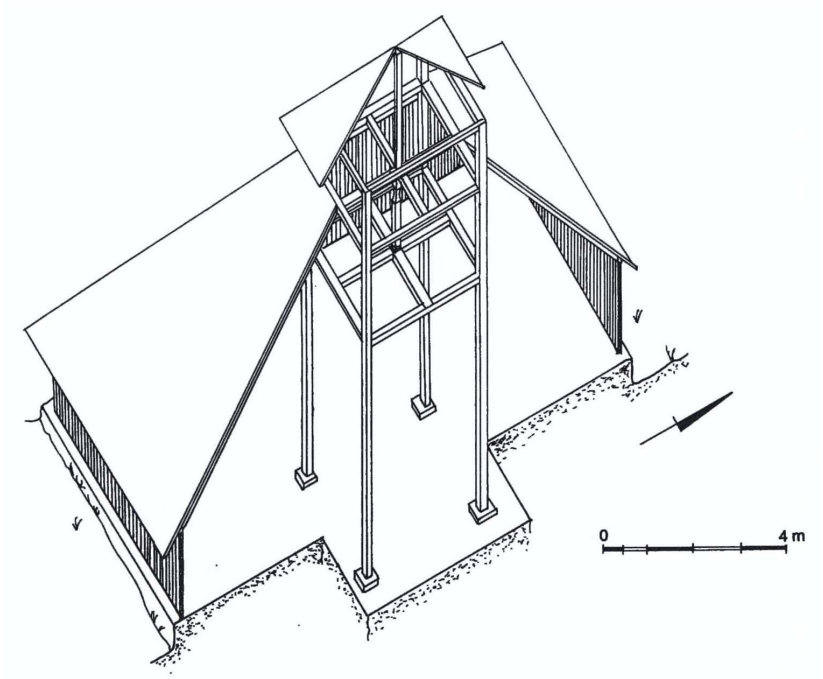


Figure 2.13: Pengadangan Mosque, Lombok-Indonesia (the most important architectural characteristics of Southeast Asian traditional mosques are distinguishable in this axonometric drawing: square plan-centralized columned prayer hall, pyramidal meru roof, and timbered structure method)
Source: Dumarçay and Smithies, 1998

Figure 2.14: Minaret of Kudus Mosque, Indonesia, 16th Century (The profound Hindu-Buddhist influence on Islamic element of minaret is obvious)
Source: In Flikr, Retrieved March 12, 2013, from https://www.flickr.com/photos/noorhilmi/3573138730/in/photolist-cUoykh-DhMZt-d83yMj-9YgyGx-5upppL-8GQrZg-MpqL-9uPxSU-7esV7r-6rKgEb-8XRs6b-8XRrVm-48ucky-ouBEjX

2.5 Vernacular Malay Mosque

Tome Pires (1944) wrote in Suma Oriental of Tome Pires:

"Whoever is lord of Malacca has his hand at the throat of Venice"

Suma Oriental of Tome Pires-Vol.1

The history of Melaka started when a Sumatran prince named Parameswara fled from Palembang to Singapore after the Javanese invasion, and from there to the coast near the mouth of the Bertam River (Pires, 1944), where he founded Melaka in the late of the 14th century (De Witt, 2010). There are numbers of debates over the date of Melaka's foundation and some Chinese passages show Chinese familiarity with the port of Melaka in the Mongol period, which indicate that Melaka was an old-established state at the end of the 13th century (Barbosa, 1921). Before Melaka's foundation, small fishing villages in the straits of Melaka hosted foreign merchants (Vlatseas, 1990), but after its establishment, Parameswara began to develop the place and carried on trades himself, so within a short period of time, news about the new town of Melaka began to spread all over Malaya, Sumatra, Java, and as far as India, which resulted in attracting a large number of foreign traders (Buyong Adil, 1974). Trade relations between Melaka and the other parts of the world developed ascribed to its ideal geographical location, alongside the political orientation of Melaka's King to increasingly expand Melaka's fame into the world of trade (Lloyd, 1986). Melaka had the advantage of providing port facilities for vessels from both directions of east and west (Zakaria, 1994). The seasonal northeast monsoon winds from November to April were bringing Chinese trading ships to Melaka, while taking Indian and Middle Eastern ships back to the west, and the seasonal southwest monsoon winds from May to October were leading Chinese merchants back to their homelands, while bringing the Indian and Middle Eastern traders to Melaka (Vlatseas, 1990).

The ideal geographical location of Melaka gave the first Malay king, Parameswara, the ability to establish strong connections with Ming China, as well as India, and Middle East (Lewis, 1995). The reduction of restrictions in commercial activities between China and foreign countries in China's trade policies under the early Ming period provided more economic contacts between China and Melaka (Dumarcay and Smithies, 1998). Contact with Chinese started through several expeditions in 1405 and had a significant influence on Melaka's politics and economic (Tan et al., 2005). In 1409, the Melaka king signed an alliance with China, whereby China supported Melaka Kingdom against the foreign invasions, such as Siamese and Javanese threats (Hoyt, 1996). Moreover, the relationship with China was strengthened with the marriage of Sultan Mansur shah and a princess from China, Hang Li Po in 1460s (Levathes, 1994). The princess, together with five hundred Chinese men and women, who came with her, converted into Islam and settled on a hill outside Melaka, which came to be known as Bukit Cina-China Hill- (Buyong Adil, 1974). Under the influence of Chinese culture there were some reforms, which affected the material culture of Malay Kingdom, for instance, Sultan Muhamad Shah made the yellow colour as the royal colour, while the commoners were forbidden to use this colour in their clothes or buildings just like Chinese imperial rules (Zakaria, 1994).

The first historical evidence of Islam in Peninsular Malaysia can be seen from a stone inscription with Arabic characters near the mouth of Terengganu river, but the spread of Islam into the interior and to the north of the Malay world was a result of the powerful patronage and influence of Melaka Kingdom (Vlatseas, 1990). Islam became the state religion of Melaka during the Sultan Muzaffar Shah reign - the third Melaka king- in the mid-15th century, and then spread throughout the Peninsula (Lloyd, 1986). Under the powerful leadership of Melaka's Muslim rulers, the city became a natural magnet and diffusion-centre of Islam in Southeast Asia (Lim, 2001). The

establishment of Islam in Melaka resulted in attracting more Muslim merchants and gaining more powerful allies (Dumarcay and Smithies, 1998). As wealthy Malay Muslim Kingdom Melaka ruled, at its peak in 1510 AD, the large parts of the Malay Peninsula and much of eastern Sumatra and the Riau Archipelago (Zakaria, 1994). By the end of 15th century Melaka had fully established itself as the Muslim leading commercial power of Southeast Asia, but this fact that Melaka was a Muslim power did not mean that its complex cultural heritage and traditions from the past had shed (Harrison, 1967).

As a result of a stable government and a policy of free trade, the Melaka became the most famous seaport in Southeast Asia, and linkage between Indian Ocean and South China Sea (Hoyt, 1996). Melaka was the wealthiest port with the greatest number of wholesale merchants and plenty of shipping and commerce worldwide (Barbosa, 1921). By the end of the 15th century, Melaka was reputed as the premier port in Southeast Asia (Lim, 2001). There was a large number of merchants of many nationalities in Melaka, who realized how much convenient was sailing to this port due to its shallow water and its safety (Pires, 1944). By the early 16th century, Tome-Pires was listing eleven ports on the east coast of Malay Peninsular as against to twelve ports on the west (Wheatley, 1971), which among them, Melaka was at the height of its power, a fascinating and exotic city whose economy rested entirely on its enter-pot trade (Lloyd, 1986); a cosmopolitan city of 100,000 where 84 languages were spoken in (Pires, 1944). *"It was to be the last maritime empire of the Malay Kingdom before the advent of colonialism during the early 16th century"* (Lim, 2001, p.78). When Portuguese conquered Melaka they demolished the city and its unique architecture (Moor, 2004). They destroyed mosques and king's palace to use the materials for church and new buildings (Zakaria, 1994). Moreover, the Portuguese restricted Islamic practices and caused an irreversible harm to Melaka's indigenous architecture.

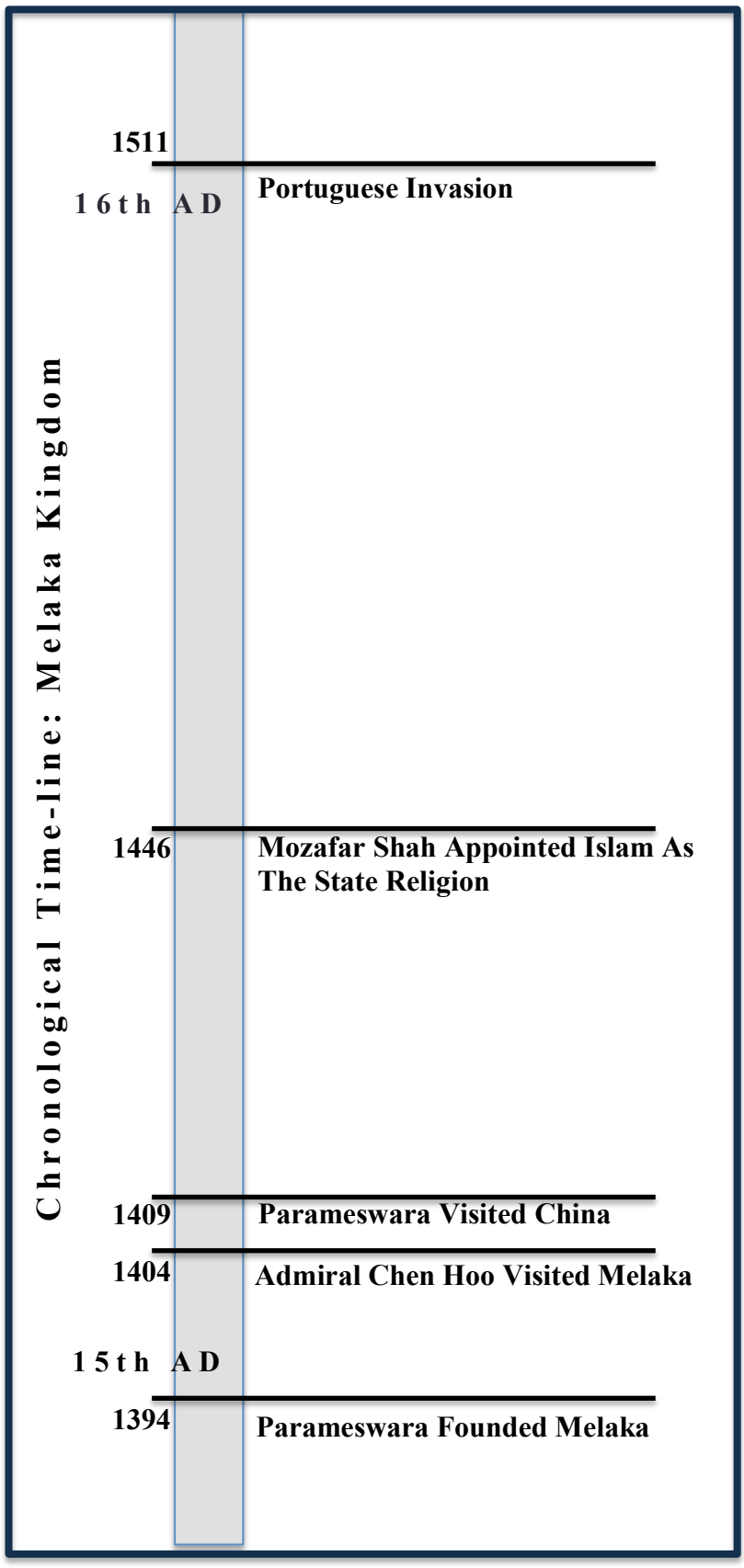


Figure 2.15: Chronological Time-line-Melaka Kingdom
Source: Derived from Lloyd. 1986: Zakaria. 1994: Hovt. 1996: Moor. 2004: De Witt. 2010

The indigenous Malay architecture has developed over centuries as a response to the environmental and climatic requirements, as well as social and cultural status of Peninsula (Lim, 2001). The Malay timber building is completely attuned to the hot, humid, and tropical environment, which is impressively conceived and executed (Gibbs, 1987). Portuguese wrecked Melaka in 1509, which resulted in a poor record on evidence of indigenous Malay buildings. Written reports on the history of Malay architecture in the 15th century are the only guides to illustrate this era's architecture (Lim, 2001). The oldest indigenous record in Malaysia is the "Malay Annals" by the Bendahara, and the first description of Malay architecture appears in this record, which concerns the Sultan Mansur Shah's palace (Zakaria, 1994).

Through the control of the physical and metaphysical forces of nature, the Malays tried to maintain the harmony of the universe, so their buildings' system, based on a set of rules from the tradition of Malay culture, ensured that harmony was achieved (Gibbs, 1987). The complex religious and animist beliefs of Malay culture and traditions from Hindu and Islamic practices have influenced the art of vernacular Malay buildings (Endut, 1993). The architectural forms of the vernacular Malay architecture vary from state to state and are mostly dominated by the shape of the roof, which *"generally reveals the source of its influence or origin"* (Lim, 2001, p.86). The main characteristic of these vernacular buildings are the raised floor, the pitched roof and deep overhangs, the open plan layout, the different height in floor planes, the use of lightweight timber structure, large window openings, and the extensive use of decorative elements (Lim, 2001).

The strategically important city of Melaka has benefited and suffered numerous influences (Bunce, 2002), therefore, the architectural heritage of this region is rich in its variety of local and foreign-inspired styles, which can be reconstructed and visualized from the written records and abundance available practices (Vlatseas, 1990).

The vernacular houses, palaces, and mosques are the most important building types in Malaysian vernacular architecture and are examples of architectural excellence. Between these different vernacular typologies, this research is interested in focusing on vernacular Malay mosques, which demonstrate the most staggering and fascinating examples of architectural practices, as they are the manifests of cultural, political, and artistic development of this region.

Since the establishment of Islam in Melaka in the 15th century, and its distribution to the Peninsula, alongside its formalized ritual, great numbers of mosques have been erected in rural areas and later in major cities, which resemble rich cultural heritage of this region (Vlatseas, 1990). The establishment of Islam in Malay world made it possible for highly skilled craftsmen to build mosques in a fashion suitable with the climate and local surroundings (Nasir, 2004). Malay Vernacular Mosque architectural style like the other early mosques built in Southeast Asia followed pre-Islamic architectural styles instead of regenerating Middle Eastern architectural features (Chen, 1998). Contrary to the mosques in the Middle East and Indian subcontinent, vernacular mosques in this region were not initially erected to venerate and raise the profile of Islam, they were simply built as modest worship places, thus the early mosques strongly follow Southeast Asian house architectural principals (Nasir, 2004). Ascribed to its historical merits and architectural values, Malay vernacular mosque style possesses an exceptional status in Malaysian architecture.

As mentioned before, considering the construction time and architectural features, mosques in Malaysia are categorized in three architectural styles; vernacular, colonial and modern styles (Ahmad, 1999). Vernacular mosques, compare to other mosque's types in Malaysia, are smaller in size and proportion, of timber structure alike to the typical Malay house (later of concrete, brick, and steel beside timber, attap, and clay tiles for roofing), and erected on a square plan on stilts (Chen, 1998). The

centralized columned prayer hall has always been made axial and symmetrical in the plan, and the entrance to this space is usually form the opposite end to the direction of qibla, but supplementary entrances may also be introduced from the sides (Lim, 2001).

The shape of the roof mostly identifies Malaysian vernacular mosques, which generally reveal the source of its influence or tradition (Ahmad, 1999). Meru or mountain shaped roof and the layered roof; the four piece pyramidal roof, which is known as "Limas" and the crown shaped roof are of the most common roof's shapes in these mosques, which are clearly of the influence from Hindu-Buddhist architecture (Nasir, 2004). *"Among the important elements incorporated in the roofs are the finials (buah butung), which usually place at the apex of the roof, the cosmic motifs on the roof walls (tebar layar), and the continuous carving along the roof eaves"* (Lim, 2001, p.88). The roof's ridge of these mosques is ornamented with decorative copings and standing ornaments (Nasir, 2004).

These mosques were built raised above the ground as a precaution against the insects and floods (Chen, 1998), as well as a reflection to local cosmological beliefs (the lower part of the building belongs to demons, middle part to human and upper part to God). The pitched roof and deep overhangs, the open plan layout, the different height in floor plan, the lightweight construction using timber and other natural materials, the large window openings, and the use of decorative elements (interesting wood carving on wall panels, railings, beam, partitions, fanlight, door and windows, Column capitals, and minbar of floral motifs, while carvings with calligraphic elements are normally used to decorate the interior of these mosques) are the most prominent elements of Malaysian vernacular mosque architectural style (Ahmad, 1999; Lim, 2001; Nasir, 2004).

Figure 2.16 demonstrates one of the best examples of Malay vernacular mosques. The Kampung Laut mosque in Kuta Bharu, Kelantan, erected in 1730s is known as the oldest intact example of vernacular mosque architectural style, still retaining its original structure, function, and state. Its architecture contains all the vernacular features of the Malay mosque, with a three-layered full-panel roof, an elevated floor raised on wooden pilings and rounded supporting pillars (Nasir, 2004).

Figure 2.16: Kampung Laut Mosque, Malaysia-Kelantan, 18th Century
Source: Rahman, 1998

As said before the powerful patronage and the strong influence of Melaka Kingdom resulted in the spread of Islam into the interior and the north of the Malay world from Melaka. Therefore, the earliest mosques in Malaysia were built in this historic city and continued to spread to the rest of the Peninsula with some alternations (Vlatseas, 1990). Melaka still possesses a number of vernacular mosques, which were erected thenceforth the 18th century, which are inspired by Austronesian, Hindu-Buddhist, Chinese, Portuguese, Dutch, and British cultural and architectural heritage. These precious architectural specimens are considered as Malaysian national and historical legacies that clearly mirror cultural development of this region. The vernacular mosque architectural style became the predominant style in Malaysian mosques between the18th and 19th centuries. Notwithstanding the preference for

Middle Eastern and Mughal mosque architectural styles and the decline in occurrence of Southeast Asian vernacular mosque architectural style, it is still the most cherished style in Melaka (Chen, 1998).

CHAPTER 3

CLASSICAL CHINESE ARCHITECTURE

3.1 Introduction

To achieve the first and the second objectives, Classical Chinese Architecture in two regions of Mainland China and Peninsular Malaysia should be explored. First section of this chapter focuses on Classical Chinese Architecture in Mainland China (Han architecture), in which various architectural characteristics of Classical Chinese Architecture are explained to create an image, able to show the splendor of Classical Chinese Architecture. The review on Classical Chinese Architecture from different perspectives, such as various typologies, including Imperial, Buddhist, and Islamic architecture, and the architecture of southern lands of China (architecture of commoners) as a variation of Northern Chinese architecture (Han architecture) will enrich this discussion.

Chinese architecture in Mainland China is the model and source of inspiration for every traditional building constructed by Chinese around the world and traditional Chinese architecture in any place outside the Homeland is a variation of Classical Chinese Architecture, including traditional Chinese buildings in Peninsular Malaysia, which have been built by the Chinese, who had faced long process of migration, as well as assimilation to the new culture and environment of Southeast Asia. Chinese builders in Melaka not only influenced the city's architectural scenery by construction of many Chinese buildings but also influenced the construction of Melakan vernacular mosques. Vernacular mosques in Melaka demonstrate impacts from Chinese architectural language common in the city; however, the influence of Classical Chinese

Architecture from Mainland China is also detectable. To gain a better comprehension of this scenario, historical contacts between China and Melaka are also reviewed.

3.2 Classical Chinese Architecture in Mainland China

Although the China's civilization developed slightly later than Egypt, Babylon, and India, it holds the division between ancient nations that retained its cultural continuity across the 4000 years of its existence (Fazio et al., 2008). The Chinese civilization consists of over fifty different nationalities and various geographical conditions (Chinese Academy of Architecture, 1982), but due to a unified government under strong emperors, Chinese architectural traditions remained remarkably stable over the centuries until the intrusion of Western culture in the 19th century (Fazio et al., 2008). From construction to form and from design concept to practice, Classical Chinese Architecture has undergone only minor changes and has maintained its fundamental characteristics (Liu, 1989). In ancient China, *"religion and myth, philosophy and politics, science and superstition, humanity and ritual were constantly confronting and complementing each other to form a unique architecture, which differed from the architecture of the rest of the world in constructional techniques and architectural aesthetic values"* (Liu, 1989, p.15).

3.2.1 The Architectural Concept and Style

Due to political and social condition of China, Chinese architecture has developed an entirely complete and independent system, which has its own standardized form and style, as well as official construction methods (Ru and Peng, 1998). The creativity of Classical Chinese Architecture has left us valuable legacy in form, colour, ornamentation, and the ordering of space (Chinese Academy of Architecture, 1982). Among the fundamental characteristics of Classical Chinese

Architecture, this study concentrates on spatial organization, construction, and ornamentation.

3.2.1.1 Spatial Organization

In China, the country controlled for centuries by societal hierarchy and governmental systems, the principles of architectural arrangement were organized by authorities and rigidly applied at every scale, from city plans to individual buildings (Fazio et al., 2008). Classical Chinese Architecture deeply demonstrates attributes such as axial arrangement, bilateral symmetry, sequencing to establish dominance, and group combination of structures (Fazio et al., 2008). Architectural buildings, from small residences to huge imperial temples and palaces are all arranged in a unified layout on one single major axis (Chinese Academy of Architecture, 1982), while the evolving cosmology in Chinese culture is perfectly reflected in the emphasis on the alignment of the plan with the four directions with the major north-south axis (Juliano, 1981). In large scales, this major axis is usually accentuated by frontal steps, which lead up to a big base (Liu, 1989).

Since the ancient times, Chinese used wood to build temples, palaces, and pagodas; so Chinese buildings were basically limited by the size of the materials (Xiao, 1998). Consequently, the Chinese wooden constructions in grand scales were not built with increased dimensions of each individual building and emphasis on vertical axis, but with smaller building group's combination to form a compound (Zhong et al., 1986). *"Sometimes halls were positioned around a courtyard and interconnected by covered verandahs or walkways to form different types of building combinations"* (Liu, 1989). The symmetrical and orthogonal structure of the plan and the elevation is another crucial characteristic of Classical Chinese Architecture, which is intended as a direct representation of the Chinese cosmos (Liu, 1989).

3.2.1.2 Construction

The unique constructional methods in Classical Chinese Architecture have maintained its basic characteristics from ancient times to the advent of modern era and spread its influence to the neighbor lands, such as Korea and Japan (Fang, 2001). The importance of constructional means in China resulted in the publication of numerous official books, such as the Song Yingzao Fashi or the Treaties on Architectural Methods wrote in 1103 and the Gongcheng Zuofa Zeli or the Construction Procedure and Standards wrote during the Qing Dynasty 1616-1911 (Liu, 1989). These publications extensively discussed building practices in every aspect, from purely technical matters, comprehensive building methods, and elaborate structural techniques to decorative details, strict regulations on building materials and manpower (Jiren, 2007). Moreover, the Chinese wooden hall's standards were codified in the Yingzao-fashi, such as the wooden hall structure, which was introduced as a four-part composition of the base, the columns, the bracket sets, and the roof (Fazio et al., 2008).

Wood is the main material that has been used widely in Classical Chinese buildings (Zhong et al., 1986); however, the Chinese also used brick and stone to construct large structures, such as pagodas, tombs, bridges, and defensive walls (Liu, 1989). In Chinese wooden-framed halls, the profusely ornamented roof sits dominantly on a series of beams' sets in parallel tiers, which has been *"augmented over time by intricate bracketing as beam-column junctions and cantilevered overhangs"* (Fazio et al., 2008, p.84). Different forms of roofs in Classical Chinese Architecture represent different classes of buildings (Cai and Lu, 2008), for instance, the important buildings, such as the throne hall in a palace or the main hall in a temple complex, employ a double-hipped roof or a double-hipped gable roof (Liu, 1989). The ridges can be

curved and shaped into the form of a smooth curve with colourful glazed tiles, or even glided tiles as roofing materials (Liu, 1989). Another roof style that has been used widely in China is the curved pyramidal roof seen on pavilions. Generally, the corners of the roof eaves are elongated outward, and upward in a graceful fashion, which has become one of the distinctive characteristics of Chinese roof's profile (Fazio et al., 2008).

Dou gong (the connection between columns' head and cross beams) consists of a *"double bow-shaped arm, called gong, which supports a block of wood, called dou",* in each side (Fang et al., 2001). It supports eaves and beams along the two directions and enables the eaves to extend further from the wall (Jiren, 2007). Dou Gong not only serves as an essential structural element to support the roof and its overhanging eaves, but also as a common decorative feature (Fang et al., 2001).

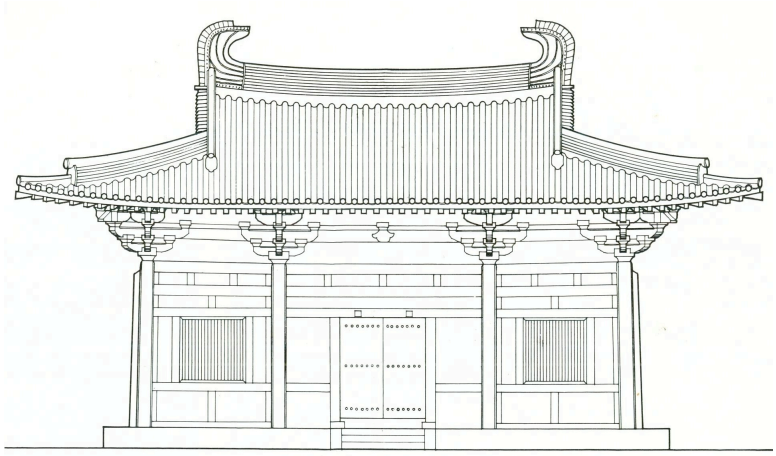


Figure 3.1: A Chinese Wooden Hall, Tang Dynasty
Source: Liu, 1989

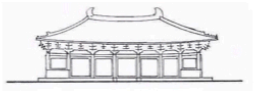
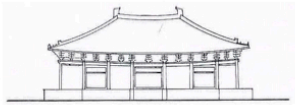
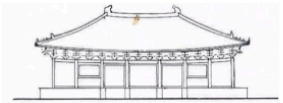
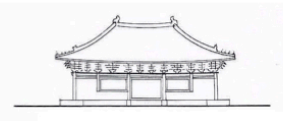
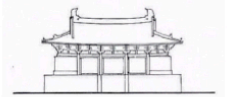
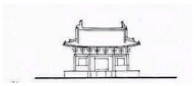
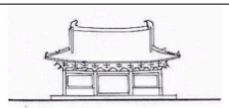
The whole length of the façade (the wooden panels, doors and windows) are coloured, while the columns divide the façade to give rhythm to the elevation, which in contrast to the gigantic and adorned roof, seem too delicate (Liu, 1989). The columns

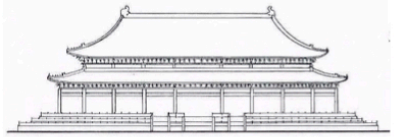
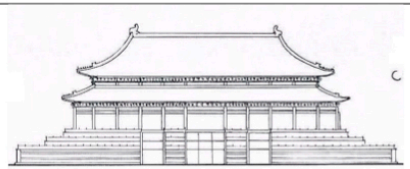
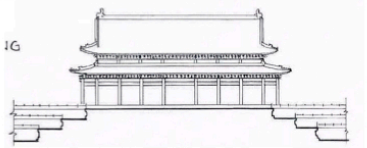
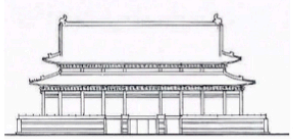
are mostly in round shaped, ornamented in various patterns; either is painted or sculpted onto the bodies of the columns (Cai and Lu, 2008).

It was a common practice in Classical Chinese Architecture to dignify important buildings by erecting them on high bases, such as the three main halls of the Forbidden City in Beijing, which were built on a three-storey base (Cai and Lu, 2008). *"Reliefs of all types of plant and animal motifs were carved onto the frames of the balustrade surrounding the base, and the ornamental column heads, creating a base that is opulent and vivid in appearance"* (Cai and Lu, 2008, p.133).

Table 3.1 shows the development of Chinese wooden framed halls in temple or palace complexes. Architectural elements of the base, the columns (the façade), the dou gong, and the roof may have changed in size or ornamentation through different dynasties, but the continuity in basic characteristics has been maintained.

Table 3.1: The Evolution of Timber-Framed Hall (Liang, 1984)

Dynasty		Tang 617 AD- 907 AD	Liao 907 AD- 1125 AD	Song 960 AD- 1279 AD	Qin
Hall Appearance	Hipped Roof				
	Hipped & Gabled Roof				

Dynasty		Ming 1368- 1644 AD	Qing 1644- 1912 AD
Hall Appearance	Double Hipped Roof		
	Double Hipped & Gabled Roof		

3.2.1.3 Ornamentation

Classical Chinese Architecture possesses the outstanding characteristic of integrating Chinese philosophies, aesthetic values, and constructional techniques to create fascinating ornamental elements and express the deep symbolic meanings rather than for the mere sake of aesthetic aims (Cai and Lu, 2008). Garnishing methods, such as painting, gold leafing, coloured glazing, and carving were all applied at the same time in the decoration of an individual building to create a harmonious and artistic unity (Zhong et al., 1986). In Classical Chinese Architecture, ornamentations were appeared on the roofs, the exterior and interior wooden walls and columns, the bases and the balustrades, on the ceilings, the lattices, and the furniture (Fazio et al., 2008).

Figure 3.2: An Example of Colour Painting, Ming Dynasty
Source: Zhong et al., 1986

The application of the sculptures and carvings, as well as the colours and colour-paintings as decorative means has created artistic form and style in Chinese architectural practices (Zhong et al., 1986). From early dates, Chinese artisans painted wooden buildings to prevent weathering and insect infestation as well to achieve ornamental effect (Fletcher, 1996). Decorative paintings were applied mainly on caissons, corbel brackets, lintels, columns and walls, and very rarely on woodwork under the eaves (Zhong et al., 1986; Liu, 1989). In China colours always have held symbolic meanings, which were often more important than the aesthetic values, so the

use of certain colours quickly became conventional (Stalberg and Nesi). Proceeding from political need, colours were divided into orthodox, which were used only by emperors such as yellow and red and unorthodox, which were used by commoners such as gray and greenish white (Zhong et al., 1986). *"Roofs with yellow-glazed tiles were considered the most sacred as these tiles were only used for buildings designated by the emperors, while the commoners, the lowest among the ranks, permitted to use only gray-coloured roof tiles"* (Cai and Lu, 2008, p.134).

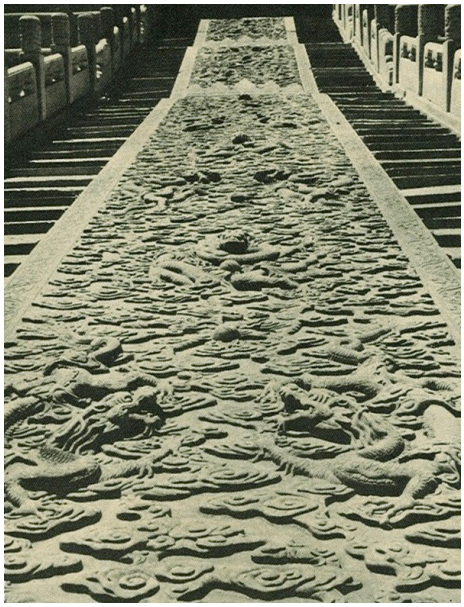


Figure 3.3: An Example of Chinese Stone Carvings, Forbidden City
Source: Zhong, et al., 1986

Chinese ornamental motifs can be classified into five main categories based on themes: animals such as the Dragon, Phoenix, Tortoise, plants and trees, the natural phenomenon for example the lightning, cloud or rain, geometry for instance circles, squares or rectangles, and legends such as the Confucian immortals or Taoist deities (Lip, 1986; Zhong et al., 1986; Lip, 1995). Symbols derived from natural elements were used excessively in interior painting designs (Stalberg and Nesi, 1983). Elements of flowers and conventionalized motifs were common in Chinese practices since the early days, but the floral designs were enriched by introduction of Buddhism, which

brought with it pictorial representation of sacred plants, such as the Buddhist lotus and the budhi tree (Cheng, 1969).

3.2.2 Building Typologies

The emperor of ancient China was known as the "Son of Heaven" and the architectural buildings such as imperial palaces, temples, and mausoleum symbolized the ultimate power of the emperor (Cai and Lu, 2008). In China, palaces' and temples' halls are similar in form and appearance and what is placed inside, as well as the applied ornamentation constituted the primary differences (Fisher, 1993). Confucian, Taoist, and Buddhist Temples, and Imperial Palaces share same basic architectural characteristics; they were walled with a group of buildings and courtyards, north-south oriented with emphasized central main axis and symmetrical/sequential plans, which demonstrated the employment of symbolic contents through ornamental means (Juliano, 1981; Liu, 1986).

A Chinese hall, be a Buddhist, Taoist, or Confucian temple or imperial palace, rises on a strong and profoundly decorated base, while the balustrade surrounding the base is carved in plant and holy animals motifs, usually with carved columns at intervals (Cai and Lu, 2008). Coloured and sculptured circular columns with coloured thin walls in between are linked to a heavy, double or single, gabled or hipped roof by magnificent colour-painted dougong (Liang, 1984). Glazed ceramic or clay tiles cover roof and smaller circular and crescent-shaped tiles, stamped with various patterns, line the edge, whilst the coffered ceiling, which is magnificently coloured or glittered with various figures, is covering the interior structure of the roof (Juliano, 1981). The ridge and copings of the roof may be linear or curved and are covered with symbolic sculptures, while extended eaves are coloured and sometimes bearing sculptures (Lip, 1986; Cai and Lu, 2008).

Figure 3.4: Yongle Temple, (The coffered ceiling, dogongs, slender columns, thin walls and lattices are coloured or carved)
Source: Zhong, et al., 1986

3.2.2.1 Palaces

A palace in China is a complete walled city structure of uttermost maturity, highest technological accomplishment, largest scale in China's architecture, and an intelligible reflection of Chinese traditions: embodiment of stable social, and political order, as well as feudal thinking (Cai and Lu, 2008). As stated earlier, there is one model for all Chinese imperial palaces, representing the excellence of Classical Chinese Architecture (Burling, 1955). Each Imperial Palace includes royal halls, temples, pavilions, courtyards and galleries, while is surrounded by magnificent gardens, rare trees, lakes, and fish pools (Burling, 1955). In addition to meeting the emperor's living demands, a palace provided strong spiritual influence on commoners and prominences by showing the difference of architecture, as well as emphasizing the axial symmetric method in the layout of the complex and expanding the axial symmetric layout to the capital (Xiao, 1998). Although palaces built under different dynasties differ in size, they represent lots of common characteristics and same

architectural model in arrangement: dominant ornamented roof, coloured dogong, thin coloured walls, slender sculptured columns, high and carved base (Lou, 2002).

The Roof: *"The decorations of the roof in imperial palaces are plentiful with many mythological interpretations attached to them, and most of these decorative elements are essential structural features with artistic and symbolic treatments"* (Ru and Peng, 1998, p.135). The roof tiles, end tiles, ridges, ridge-ends, and cantilever eaves are profusely and elaborately ornate with colour-paintings and sculptures, while all are bearing structural functions (Liu, 1989). Usually roofs in palaces are covered with golden glazed clay tiles, while pronounced ridges are bearing various sculptures of holy animals (Lip, 1986). Figure 3.5 illustrates various structural and ornamental features on the roof in a Chinese imperial palace.

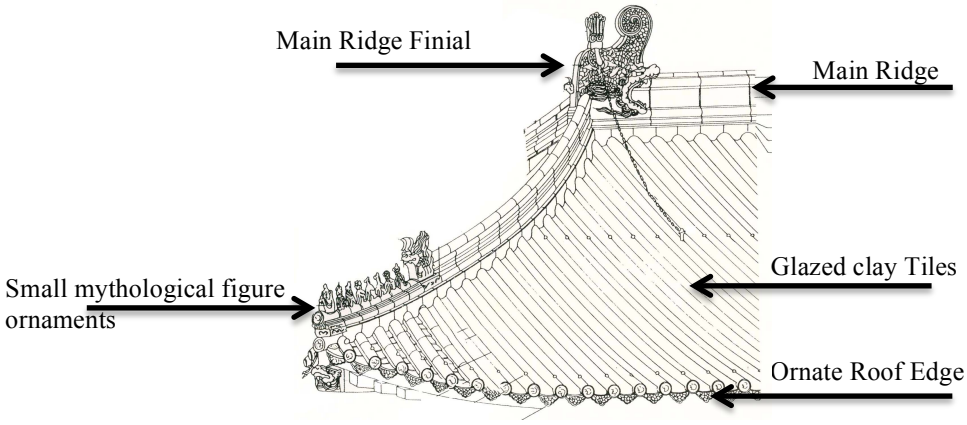


Figure 3.5: Various features on roof design in Chinese imperial buildings
Source: Ru and Peng, 1998

The Façade: It is not only the roof in Chinese palaces that demonstrates astonishing ornamentation. The façade, including the magnificent Dou Gongs with colourful paintings and adorned columns with floral, animal patterns, and natural elements such as cloud and thunder, which are painted or sculpted onto the bodies of the columns are of excellent features in Chinese architecture (Cai and Lu, 2008). The exterior and interior thin paper-walls, as well as the interval panels between roof tiers

demonstrate magnificent colour-paintings with different motifs, such as dragons, phoenixes, natural elements, fairies, aquatic flowers, plants, and delicate patterns (Stalberg and Nesi, 1983; Zhong et al., 1986). Furthermore, the decorative paintings in Chinese architecture performed a double function of protecting the building, expressing symbolic meanings, and meeting aesthetic needs (Zhong et al., 1986).

The Base: Another feature in a Chinese palace is the great base, where a building or a building complex stand, which were designed to prevent dampness, offer advantages in ventilation and in defense, provide magnificent appearance, also was the important symbol of social position of the occupants (Ru and Peng, 1998). Most of the luxurious palaces of the emperors of China were destroyed when the dynasties fell and only the Forbidden City in Beijing is preserved intact (Fletcher, 1996). In the palace of Beijing city, the Great Halls sit on a three-tier base, which is surrounded by a white marble balustrade with upright stone posts in between, which all carved in dragon-and-cloud patterns (Ru and Peng, 1998).

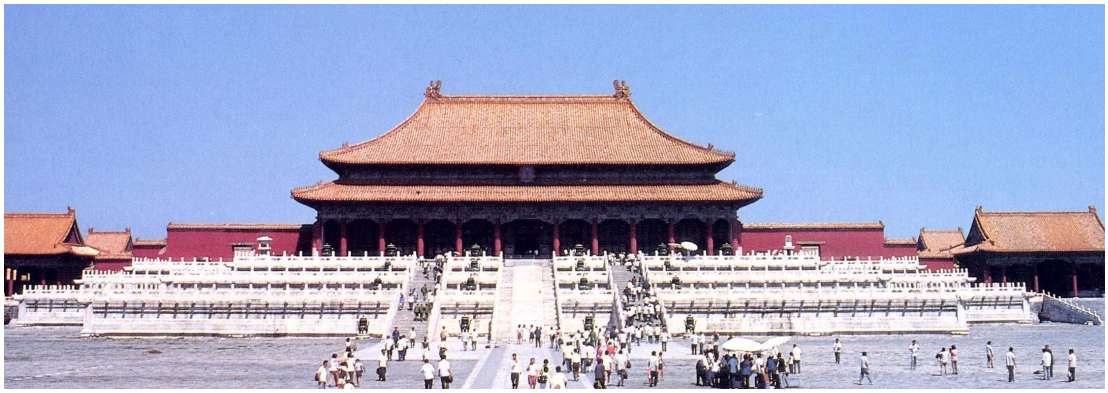


Figure 3.6: Imperial Palace of Forbidden City, Ming Dynasty
Source: Liu, 1989

3.2.2.2 Temples

Confucianism, Taoism, and Buddhism were the main philosophies and religions in ancient China, each gathering a group of believers, who performed a set of

rituals at designated sites (Lou, 2002). Chinese temples are legacies in stone, wood, brick, and bronze, *"tangible evidence of the forces, which shaped China's civilization, contributed to its richness, and represent some of China's greatest artistic achievements"* (Juliano, 1981, p.94). The basic architectural characteristics of Chinese temples, whether it is a Confucian, Taoist, or Buddhist are the same; orthogonal axial planning, symmetry and the courtyard concept, beam-frame construction, the tiling or upturned roof system, as well as the application of bright colours and ornaments were of main principals in the design of a Chinese temple (Lip, 1986; Lip, 1995). Roofs in Chinese temples are the most distinctive architectural feature due to their interesting forms, often are decorated with colourful sculptures of animals, plants, and holy personages on the main ridge and the sloping copings (Lip, 1986). These roofs generally bear a crown on the middle of the main ridge, designed in a variety of forms with various decorations. The intervals between the tiers of the roof may demonstrate colour-paintings or clerestory windows (Liu, 1989). The cantilever eave corners are slightly curved upward, providing aesthetic needs, as well as fulfilling functional purposes (Fazio et al., 2008).

In feudal society of China, Confucius had always received the great reverence of the emperors, as well as the commoners; therefore, Confucian temples were erected in various localities (Xiao, 1999). Most of the extant Confucius temples were constructed during the Ming and Qing Dynasties under the emperors' supervision, showing their attention to Confucianism (Xiao, 1999). These temples followed the traditional pattern applied to all temples and palaces; they were north-south oriented timber-framed halls, sitting on the base with profusely ornamented roof, ornamented with the crown, pronounced ridges and projected eave corners (Juliano, 1981; Wei, 2000).

Figure 3.7: Beijing Kong Miao (Confucian Temple), Qing Dynasty (The crown, pronounced and sculptured ridges, and elongated corner eaves are of fundamental elements in roof's Ornaments)
Source: In Viator. Retrieved May 9, 2013, from http://www.viator.com/photos/Beijing/Confucius-Temple/d321-3965/1365640

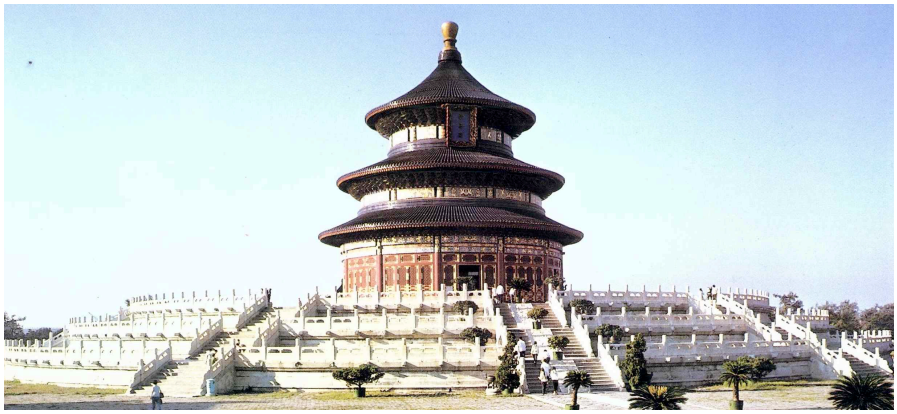


Figure 3.8: Temple of Qinian, Beijing, Qing Dynasty (Roof is the dominant visual feature in Chinese halls)
Source: Chinese Academy of Architecture, 1982

Although Taoism never achieved the political prestige of Confucianism, it contributed extraordinary richness and depth to Chinese philosophy, poetry, and architecture (Juliano, 1981). There were Taoist temples erected in the urban areas, but the majority of them were built in forestlands and mountains to be away in seclusion (Xiao, 1999). In the urban cases, Taoist temples followed the same ground plan as Classical Chinese compounds; the principal hall sitting astride the axis of the

compound, while less important structures are placed at either side, if possible in a symmetrical order (Lou, 2002).

3.2.2.3 Buddhist Architecture

When Buddhism found its way from India into China as early as the 1st century AD (Lou, 2002), it did not intrigue the society in general and more importantly was not noticed by the authorities (Wei, 2000); however, over time Buddhism could exert a profound influence on every aspect of the social life in feudal China (Lou, 2002). Indian Buddhism gradually merged with Chinese traditional culture, such as Confucianism and became a part of the Chinese culture to create a unique Buddhism with Chinese characteristics (Wei, 2000; Lou, 2002). During the 5th and the 6th centuries, the widespread popularity of Buddhism among both the authorities and the society resulted in the construction of numerous Buddhist structures in China (Wei, 2000).

Buddhist architecture did not at first possess a style of its own; however, as Buddhism spread into China and impacted Chinese culture and art, numerous Buddhist buildings with Chinese characteristics were built in the region (Wei, 2000). Chinese buildings with Indian roots emerged due to the integration of Chinese architectural ideas and Buddhist teachings (Fazio et al., 2008). Buddhism in China led to new impulses in Chinese art and architecture, but as they met with a strong and highly developed native culture, these new influences led to a Buddhist art and architectural style that had Chinese modifications (Wei, 2000). Buddhism continued to develop in China for almost 2000 years; during which, Buddhist architecture with its distinctive wooden temples and pagodas has become one of the best-known subjects of Chinese art.

Buddhist Temples and Monasteries

Since the Northern and Southern dynasties (5^{th}-6^{th}), the time when many in China accepted Buddhism, countless Buddhist temples and monasteries were built all around the country (Fisher, 1993). Once the architectural style of Buddhist temple complex in China reached its ultimate form, it demonstrated all the fundamental elements in Chinese architecture (Cai and Lu, 2008). The Buddhist temples in China, far apart from Buddhist temples in India, represent pure Classical Chinese architectural characteristics, for instance, in contrast to Indian temple that focuses on vertical arrangement, the Chinese Buddhist temple avoids prominent or towering groups of structures (Fisher, 1993); however, as will be explained later, the high-rise Buddhist halls were erected in China, from the 8^{th}-9^{th} centuries (Liu, 1989).

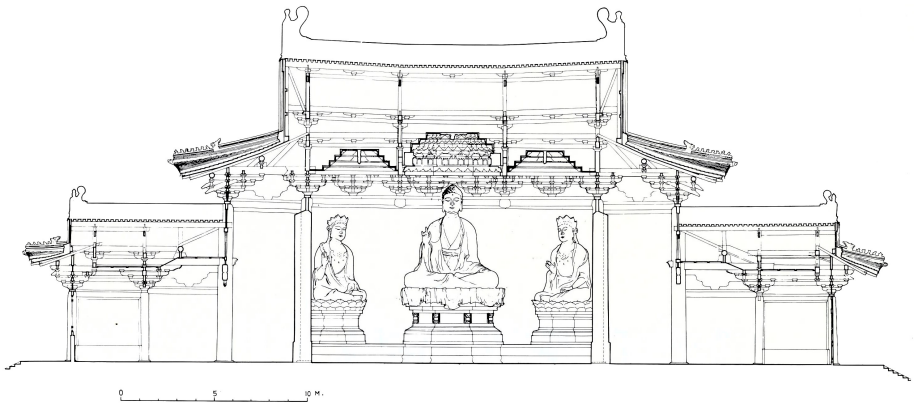


Figure 3.9: Zhending Temple- Main Hall Section, Song Dynasty
Source: Liu, 1989

Usually, a Chinese Buddhist hall is raised upon a base (usually of brick), whilst the elaborate and aesthetically interesting dougong is providing an attractive transition from the vertical columns to the horizontal plane of the massive roof (Liu, 1989; Fisher, 1993). The principal hall houses images of Buddha, which are placed inside the hall as integral parts of it to create a harmonize unity (Kohl, 1984; Liu, 1989). Since the middle of the Tang dynasty, the application of the large statue in main halls has resulted in the construction of high-rise halls; however, the horizontal lines in these

practices still dominate the elevation (Liu, 1989). A large vertical void inside the hall, with surrounding galleries around it, provides the space to house the huge Buddha Image (Liu, 1989). It should be noted that the construction method in these halls is still similar to the one-story halls (Liu, 1989).

In general, there are two types of Buddhist temple complexes in China: the first is a combination of the pagoda, with the temple halls, and the monks' accommodations, while the second consists of the halls arranged around the courtyards without the pagoda (Fletcher, 1996). The early Buddhist temples in China were built with a pagoda as the main part of the design at the centre of the complex, inspired from Indian Buddhist concept (they placed stupa at the centre instead of the pagoda) (Xiao, 1999), but as Buddhist temples developed on an indigenous Chinese design, the pagoda was being placed in the back of the temple hall to position the main halls as the centre of the entire temple complex (Cai and Lu, 2008). In later Buddhist practices, especially since the Ming and The Qing Dynasties, the pagoda was built rarely in the temple complexes, so the second Buddhist temple complex style commenced in Chinese architectural development (Fletcher, 1996). In the both mentioned styles, the main halls are arranged on the central axis, and large-scale halls are located on both sides to form further axes parallel to each other for the position of subsidiary halls and monks' dwellings (Wei, 2000).

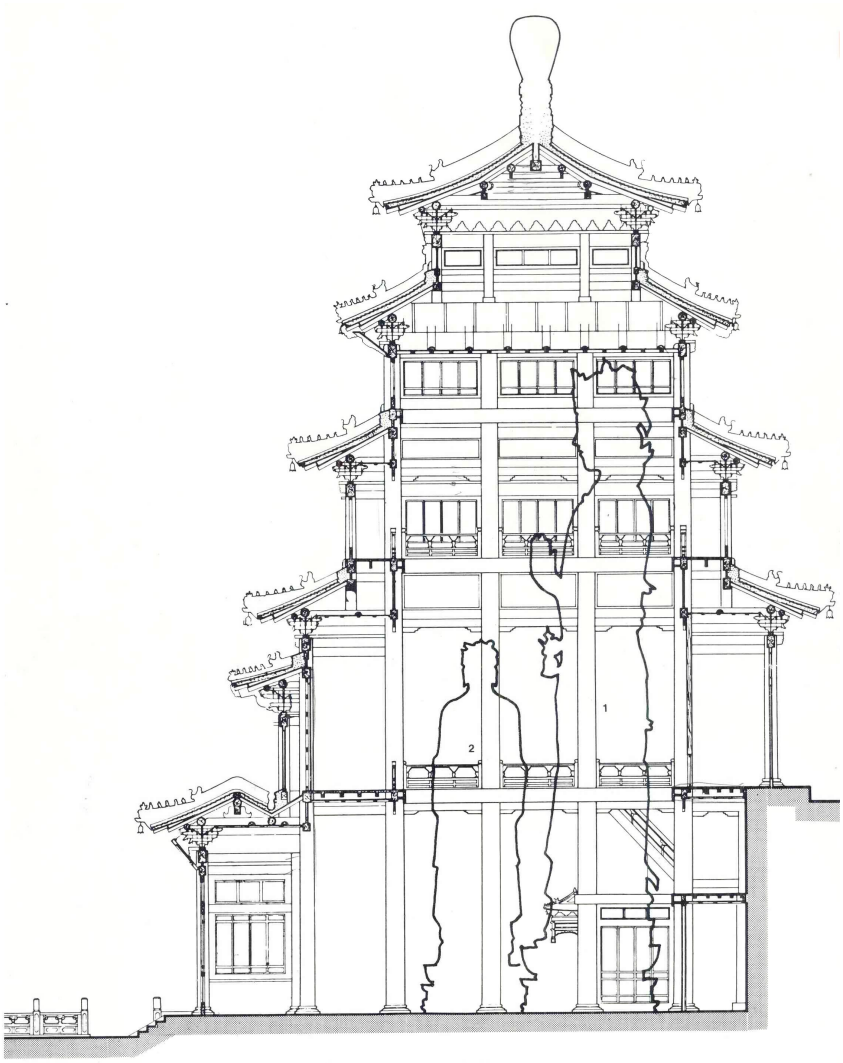


Figure 3.10: Dacheng Ge Temple, Hebie Province, Qing Dynasty
Source: Liu, 1989

The Pagoda

The Buddhist Pagoda is a fascinating example that demonstrates an Indian-Buddhist monumental element integrated with pure Chinese architecture. Inspired from both Indian stupa and Chinese multi-storied watchtowers in military construction, the pagoda and its decorative designs have been formed as a result of the modification to Indian architectural art (Academy of Chinese Architecture, 1982). The vertical, rectilinear shape and the use of the overhanging tiled eaves can be attributed to earlier Chinese watchtowers, dating from at least as the Han Dynasty in 3rd BC-3rd AD

(Fisher, 1993). As a religious structure, the pagoda became a graceful one- or multi-storey architectural monument, with layered roofs (the stories are accessible by interior stairs), while its original purpose to house relics and sacred writings was expanded to make the structure into a vertical marker in the landscape (Fazio et al., 2008). Chinese pagodas initially appeared in the centre of Buddhist-Cave temples, cut from the cliff to form a square pagoda, with several stories consist of a series of figures within niches or, in some examples of a single large figural group filling each side, whilst the shallow overhanging eaves were carved in imitation of roof tiles, and the spire, symbolizing the 'world mountain', disappears into the ceiling of the cave (Fisher, 1993). In later stages, the pagodas were built of wood in temple complexes.

The earliest intact wooden pagodas have remained since the mid 5th century AD; however, according to literary sources, the earliest wooden pagodas appeared in China's landscape since the 3rd century AD (Liang, 1984). These early pagodas were indigenous multi-storied towers, square in the plan, constructed of timber, and surmounted by a stupa (Liang, 1984). Later when the monastic plan was established and followed the Chinese constructional characteristics, the pagoda was placed directly behind the inner gate and immediately in front of the image hall, and the halls at the rear (Fisher, 1993). This continuous row of buildings gave the pagoda and its sacred relics a prominent place, since it was the first building encountered upon entering the central courtyard (Fisher, 1993). During the Eastern Jin Dynasty (317-420) in the south of China, a style evolved, in which two pagodas were placed symmetrically in the courtyard of the temple; during the Tang Dynasty (618-907) there were independent courtyards for pagodas; from the Song Dynasty (960-1279) onwards, pagodas were gradually moved to the rear or to the east and west ends of the monastery, and later, they were even moved out of the monastery (Fisher, 1996; Wei, 2000). Buddhist

pagodas were built only rarely during the Ming and the Qing Dynasties (Fletcher, 1996).

The Chinese erected pagodas in a variety of shapes, styles, and materials (such as wood, bronze, stone and brick- the latter materials being used in imitation of wooden pagodas) (Fisher, 1993). Scholars have classified pagodas generally into six different styles, which can be described as bellow.

Tower-styled Pagoda: The earliest existing tower-styled pagodas were built in the Tang period (7^{th}-10^{th} AD) and were square in the plan; however, since the 10^{th}-13^{th} centuries, the octagonal layout was prevailing (Fletcher, 1996). The external appearance of the pagoda in this style is characterized by windows, round pillars, square pillars, dou gong brackets, and eaves, formed by using wood moulds (Wei, 2000). In this type as the structure rises, each story diminishes slightly in both height and width (Liang, 1984). In most cases, the pagoda's receding stories present an image of clarity and even rhythm, in distinct contrast to the complex bracketing and coloured tiles of temple structures (Fisher, 1993). In the early years, most of the tower-styled pagodas were of wooden structure and tall in shape, while after improvements in stone and brick piling skills the stone and brick pagodas were built in square, hexagonal, and octagonal shapes (Wei, 2000).

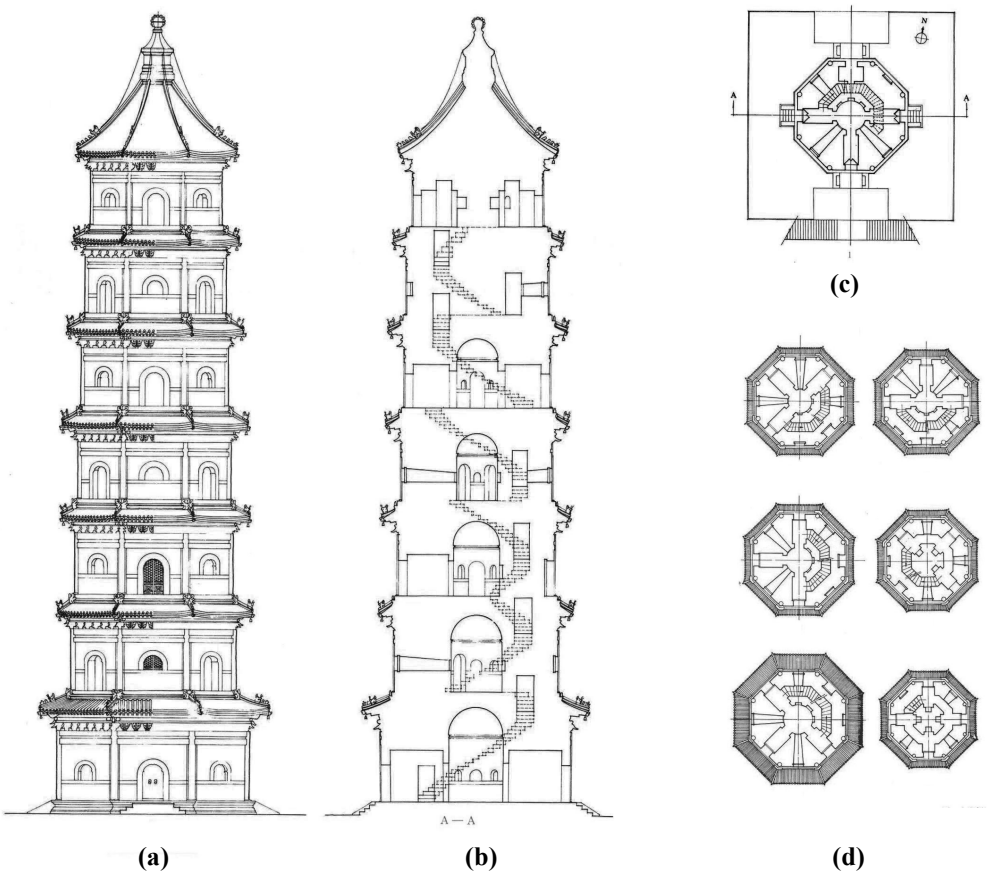


Figure 3.11: Yufeng Pagoda (tower-style pagoda), Beijing
a) Elevation b) Section c) Ground Floor Plan d) Floor Plans
Source: Zhong et al, 1986

Close-eaves Pagoda: This type is characterized by a high principal story, normally without a base and with many courses of eaves or cornices, which are usually odd in number, seldom fewer than five and rarely exceeding thirteen (Liang, 1984). The first storey of the pagoda usually provides surface for decoration with Buddhist statues, lotus flowers, and geometric patterns; doors, windows and pillars all providing additional forms of decoration, whilst above the second storey, there are generally no doors or windows (Wei, 2000). The combined height of the eaves is usually about twice that of the principal story (Liang, 1984). The pagoda's multiple levels, accessible by interior stairs, followed the early custom of surmounting the square base with a

series of narrow storeys and in some cases are divided by shallow eaves that accentuated the gently curving tower (Fisher, 1993).

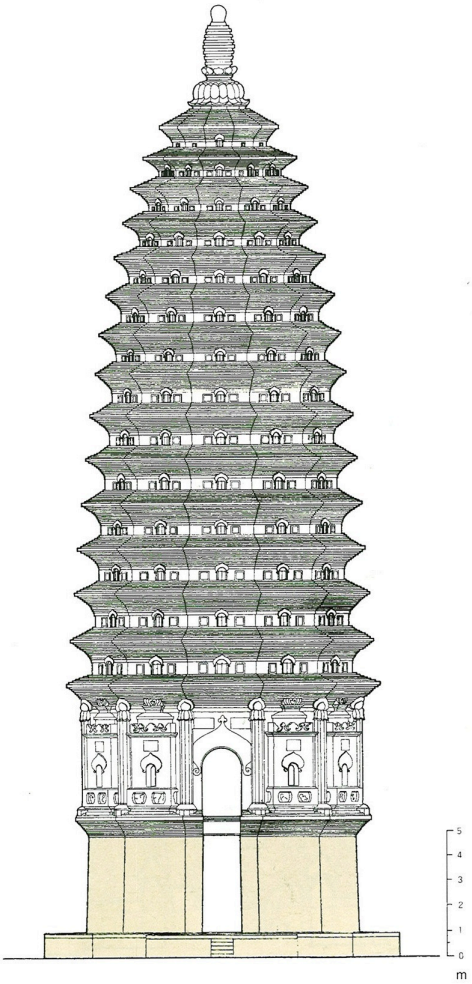


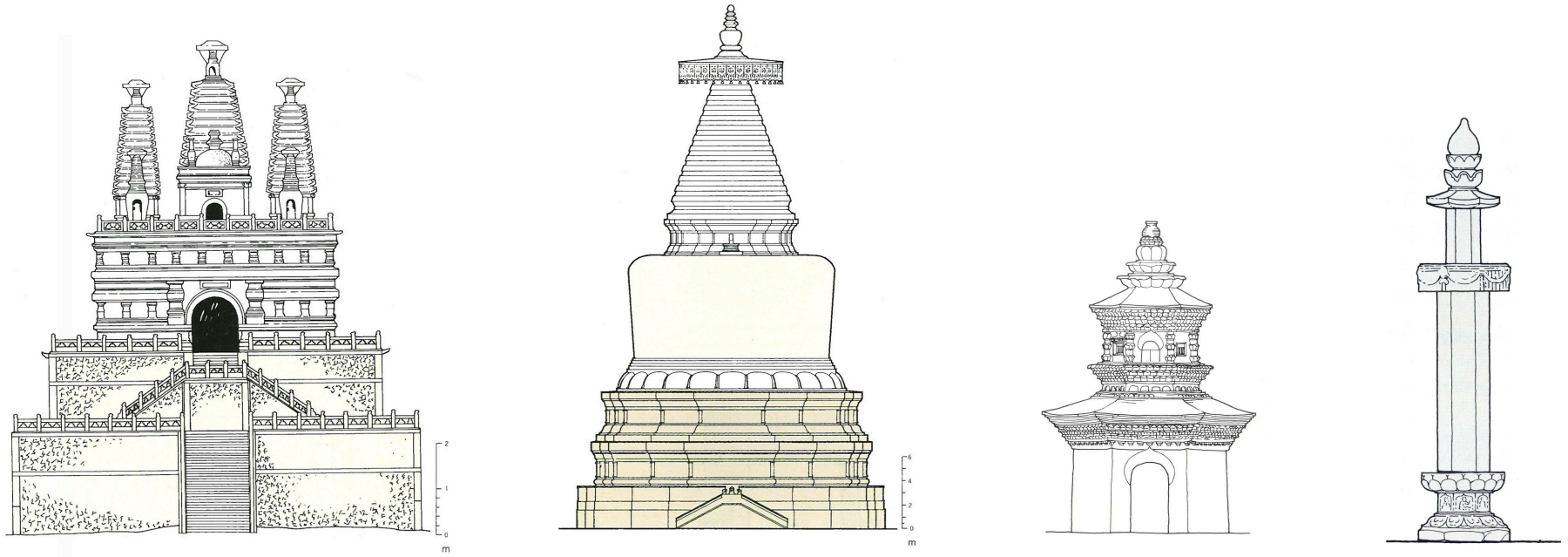
Figure 3.12:Close-eaved pagoda, Northern Wei Dynasty
Source: Wei, 2000

The diamond-throne Pagoda: The lower part of the pagoda consists of a huge base, which is sculptured with fine Buddhist statues and patterns, while the lower part of the base has a door and on the top of the base, five small pagodas stand (the central one slightly larger than the others) (Wei, 2000). Each pagoda is a closely layered eaves style and pyramidal in shape, which was popular during the Ming and Qing Dynasties (Fletcher, 1996).

The Vase-shaped Pagoda: This style has been erected in China since the 10th century and is more Indian than any other styles (Liang, 1984). This type has evolved directly from stupa and usually were built in groups; sometimes five or more in a line, or arranged symmetrically around a major building (Fletcher, 1996). Its lower part forms the foundation, which is quite tall, and it is topped by a semi-circular construction, which is the obvious forerunner the stupa, while the upper part is forming the pagoda's body (Wei, 2000).

The Pavilion-styled Pagoda: This type is usually small and more like a shrine than a pagoda (Liang, 1984). Most are single storey and can be square, octagonal, circular or hexagonal in shape (Wei, 2000). Generally, they were built as tombs for monks and nuns and are often found in groups or lines adjacent to the temples (Fletcher, 1996).

The Dhanari Pagoda: One peculiar Buddhist monument that originated in the Tang Dynasty is Dhanari Pagoda, or Dhanari Column, which vary widely from a simple octagonal column set on a base, and crowned by a sort of cornice or umbrella to the shape of a real pagoda (Liang, 1984).



(a) (b) (c) (d)

Figure 3.13: Various Types of Buddhist Pagodas a) Diamond-throne pagoda, Qing Dynasty b) Vase-shape pagoda, Liao Dynasty c) Pavilion style pagoda, Tang Dynasty d)Dhanary pagoda, Tang Dynasty
Source: Liang, 1984; Liu, 1989; Wei, 2000

3.2.2.4 Islamic Architecture in China

Islam was introduced to China in the middle of the 7th century (Liu, 1989), and since then numerous exquisite Islamic mosques were erected in the region by various ethnic Muslim minorities, especially in northwestern provinces and southern coastal cities (Lou, 2002). During the Tang Dynasty, the Muslims came to China via Silk Road and settled in the northwestern provinces, such as Xinjiang and Shanxi, or via Sea Routs and settled in southern ports, such as Canton and Guanzhou (Liu, 1989). As a result, following the advent of Islam in China, a great number of mosques of different size and style were erected in the region, especially in mentioned areas. The majority of early mosques in China strongly maintain the Middle Eastern or Mughal mosque architectural style in form, planning, arrangement, and ornamentation, such as Shenyou mosque in Fujian's Quanzhou (Fletcher, 1996; Cai and Lu, 2008); however, the Chinese mosques influenced by Middle Eastern architectural style can also be found in later practices. The mosques that follow the Middle Eastern and Mughal architectural style present pointed arched openings in a rectangular façade, with usually two flanking minarets at the sides of the main gate, verandas with pinnacles, and domed roofs (Liu, 1989; Lou, 2002). In some cases, minarets are placed majestically at four corners of the building (Liu, 1989).

Even though the earlier Islamic mosques in China profoundly resemble Middle East and Mughal mosque architectural style, through time, the foreign architectural features in mosque design from Central Asia absorbed, adopted, infused, and applied in later mosque practices in China to create a unique Chinese Islamic architecture, which is a new style based on the foundation of both Islamic and Chinese traditions (Liu, 1989). With the integration of Classical Chinese Architecture and Islamic teachings and requirements, mosques erected in China, demonstrate techniques,

materials, and traditional layout of Classical Chinese Architecture (Cai and Lu, 2008). The mosques that are predominantly Chinese in style consist of an enclosed component with a number of courtyards, a Pavilion-like structure as minaret, and prayer halls and other important structure located on the main axis (Lou, 2002). The Huajiao Lane Mosque in Shenxi (1392) and the Niujie Mosque in Beijingh (1699) are of the best examples in this mosque architectural style, which strongly resemble Classical Chinese architectural characteristics in layout planning, elevation form, roof style and to a certain extent, in ornamented elements (Liu, 1989).

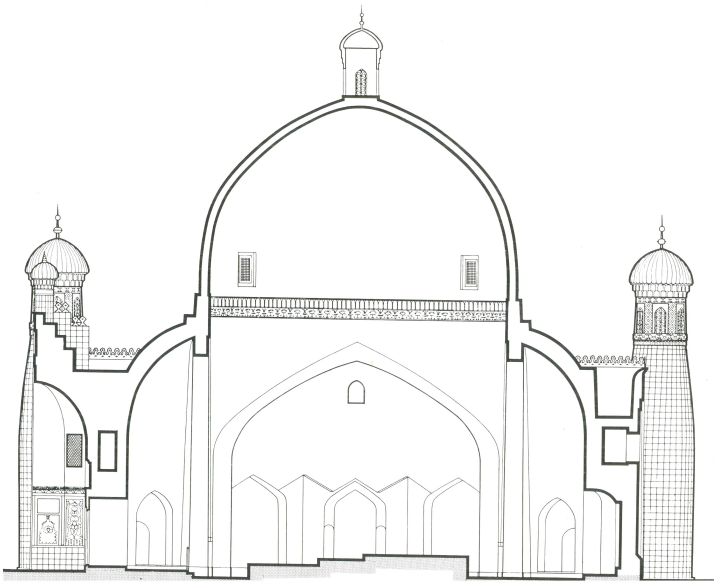


Figure 3.14: Aba Khoja Mausoleum Complex, Kashi, Qing Dynasty
Source: Liu, 1989

In some cases, both Classical Chinese and Middle Eastern architectural elements can be detected in a mosque. “For instance, the domes and tipped roofs are of Middle Eastern style, where as the hexagonal and octagonal tiled roofs are of Chinese influence” (Cai and Lu, 2008:81). Although these Chinese style mosques profoundly resemble Classical Chinese Architecture, the Islamic requirements are perfectly fulfilled, as these mosques, instead of obtaining a north-south orientation of Chinese traditions, are oriented toward the west, facing the direction of Mecca (the holy land in Islamic culture) and the holy Black Stone (Lou, 2002). Consequently, mosques in

China have generally a main gate in the east wall and hold a west-east principal axis, in contrast to the north-south main axis of other Chinese religious buildings with main gates, mostly in Southern walls. Furthermore, under the powerful influence of Classical Chinese Architecture, these mosques follow the architectural complex concept; a combination of building groups with separate roofs to form a compound in order to accommodate a large congregation.

Similar to Islamic style in Middle East, ornamental elements have a crucial position in Chinese mosques; however, unlike a typical Middle Eastern mosque that generally uses mosaic and cement as decorative means, the Chinese mosques present wood and brick, on which garnishing patterns have been carved or painted (Cai and Lu, 2008). Since the use of animal figures are forbidden in the Islamic decorative art and architecture, Chinese mosques bear floral motifs, arabesque, and calligraphy instead of Chinese decorative motifs of holy or zodiac animals; however, there are some examples that show application of animal figures on the ridge of the roof (Liu, 1989). Sometimes a combination of Chinese and Arabic calligraphy in engraved boards can be detected in these Chinese style mosques (Cai and Lu, 2008). Moreover, these mosques show Chinese architectural traditions in application of certain colours such as red and gold (Liu, 1989).

Minaret as the most distinctive feature in Islamic architecture retains its importance in Chinese mosque. Following the architectural style of the whole mosque complex, the minaret –known as the light tower in China- may follow Middle Eastern or Mughal styles to form a tower or may follow Classical Chinese architectural style to from a pavilion-like structure (Liu, 1989; Lou, 2002). The Huaisheng Mosque in Guangzhou and the Great Mosque of Xian hold the best examples of minarets, which erected under the influence of Classical Chinese Architecture.

Figure 3.15: Niujie Mosque, Beijing, 10th-17th
Source: In Wikipedia. Retrieved August 15, 2013, from http://en.wikipedia.org/wiki/Niujie_Mosque

Figure 3.16: The Minaret of the Great Mosque of Xian, Mainly Ming Dynasty
Source: In Wikipedia. Retrieved August 15, 2013, from http://en.wikipedia.org/wiki/Niujie_Mosque

3.2.3 Southern Chinese Architecture

Due to ethnical, cultural, and environmental differences between Northern and Southern lands in Chine, their architecture is slightly different (Knapp, 2004). The poorer living conditions of the Southern China made this part less developed, compared to civilized and cultured central and northern lands in China, so Northern Chinese had always referred the southern people as rebellious, less cultured barbarians (Pan, 2006). Sothern Chinese architecture, as modest opera houses and vernacular houses, has formed as a response to common people's daily lives, pure religious values, legendary traditional folks, as well as climatic conditions (Kohl, 1984). An example of the Southern opera house is presented in Figure 3.17.

Although there are differences between two architectural styles, Southern Chinese architecture still follows the fundamental characteristics of Classical Chinese Architecture in Northern China, such as symmetry, axial planning, hierarchy, and enclosure (Khoo, 1996), so it can be said that Southern Chinese architecture is a variation of northern Chinese architecture. During the Song Dynasty, due to constant invasions from the north, the imperial court was relocated to the south; as a result, many temples were erected in the region with Southern constructional style and under the supervision of the emperor (Liu, 1989). For instance, as a response to the hot and humid weather of Southern China, the Kaiyuan temple demonstrates openings at the interval of roof's tiers. *"The spaces between eaves are open to the outside, a device allowing the warm air to circulate"* (Liu, 1989, p.105). Moreover, this temple holds more apparent ridges and eaves, *"as the southern people liked a soft and graceful appearance"* (Liu, 1989, p.105). As it is illustrated in Figure 3.18, the temples that have been erected in Southern provinces under the governance of emperors, present the same architectural features as the Northern Chinese architecture.

Basic characteristics of Southern Chinese architecture are bilateral symmetry, axiality, hierarchy, and enclosure (Knapp, 2004), which have been formed due to traditional beliefs, sense of beauty, and climatic conditions. In many examples of Southern Chinese temples, the imperial double-hipped roof is replaced by three-sectioned gabled roof (Khoo, 1996). The middle section is usually raised slightly higher than the other sections and is separated from them by raised, inward curved, profusely ornamented copings, whilst the elongated eave ends are curved upwards (known as swallow tails) and highly decorated (Kohl, 1984). Moreover, these temples are modest in size with elevated gable walls and ornamented wall friezes underneath the roof (Kohl, 1984). Southern Chinese temple layout consists of two side halls flanking a main hall, which holds the altar, whilst all three halls opening directly to a courtyard (Kohl, 1984).

Figure 3.17: The Opera House, Zhejiang Province (dramatic corner eaves, and exaggerated ornamental features are of Southern Chinese architectural characteristics)
Source: Cai and Lu, 2008

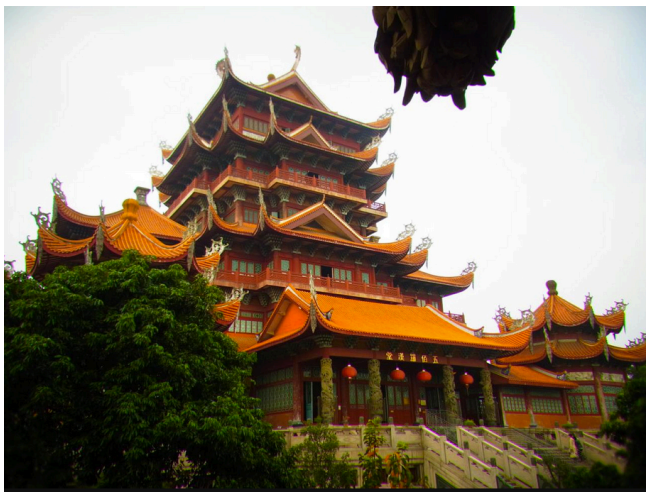


Figure 3.18: Xichan Temple, Fujian Province, Tang- Qing Dynasy (The hipped-gable roof of this Southern temple, indicates it as a building of secondary importance)
Source: In Flikr. Retrieved May 10, 2013, from https://www.flickr.com/photos/tigerking/5251747330/in/photolist-nYSmCP-nYSnxe-9gHfto-oi84DK-nYTmbT-912mnT-912trx-915tq5-912nX8-912npv-915sh5-912kxp-912qsB-915yh9-912pHz-915zLE-915zvL-912von-915AZJ-915wNb-915wsC-915w95-912rgX-912kKH-912qcn-912mGt-915t2L-915sEA-915zjo-915Cg5-915yqy-915yL9-915rV3-912pXz-915tYG-912n5K-915tAb-915rK1-912seV-912sP4-7iSgBQ-7iNnte-7iS39y-7iSgFL-i2j9BM-74ba3-74bcx-74b9R-74b9x-ftVbBM

In Southern Chinese architecture (as architecture of commoners'), the plans are shaped over centuries by both practical and philosophical considerations, defensive and administrative needs, social and political priorities, and cosmological traditions (Juliano, 1981). As mentioned before, following the Confucian concept in categorizing different social classes, the construction of buildings was based on the premises of aesthetics, as well one's social status, which would then denote the types of ornamentation, colours, quality of materials, and themes that a person was allowed to use (Cai and Lu, 2008). As a result, some features, such as dou gong and some colours, such as yellow could only be used in imperial palaces and temples (Ru and Peng, 1998; Knapp, 2004). Although a commoner's house did follow fundamental characteristics in Chinese architecture, for instance wall enclosure, courtyard, and north-south main axis, while presenting completely different appearance from palaces

and temples. Figure 3.19 represents an example of commoners' buildings in Southern China.

Due to the hot and humid environmental condition in Southern China, the Northern courtyards were transformed into sky wells in Southern practices, while local materials such as wood, earth and stone were used as the main building materials (Knapp, 2004). Moreover, the decorative elements on the roof of important buildings differed from those used on the more common structures. The exterior whitewash brick walls with ornate entrance, simple gable roofs with gray tiles, and colour paintings on ceiling (a commoner could only use pink, purple, gray and greenish white), inner modest wooden structures, courtyard, and carved wooden balustrades, lattices and beams are simply form a commoner's building (Juliano, 1981; Zhong et al., 1986). The architecture of the commoners is a genuine image of life and culture of Chinese people attaining physical needs, while concurrently, expressing meaning through its unique symbolic language (Liu, 1989).

Figure 3.19: Southern Chinese Architecture- The Architecture of Commoners' (The three-sectioned gable roof, whitewash walls with no ornamentations, and grey tiles as roof's material are of distinctive characteristics)
Source: Cai and Lu, 2008

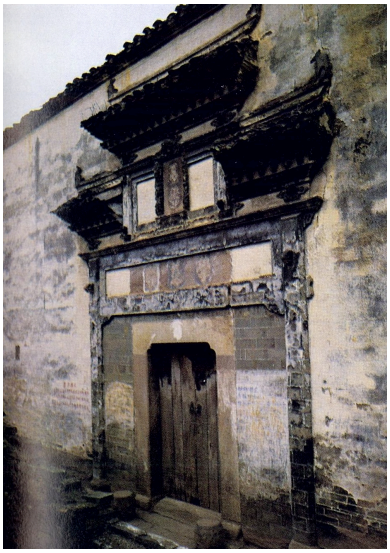


Figure 3.20: Architecture of Chinese commoners in Southern China- The Ornate Entrance
Source: Juliano, 1981

3.3 Chinese Architecture In Peninsular Malaysia

Preceding the study of Chinese architecture in Peninsula, study on historical relationship between China and Southeast Asia lands, and also resulted political, economic and cultural impacts are essential. Contacts between two entities happened over centuries, mainly by individual Chinese traders and Buddhist pilgrims at the early stages of history (Wang, 1992), by imperial personages, admirals and numbers of

individual merchants in later periods (Khoo, 1996), and by Chinese labors, craftsmen and coolies after the 19th century (Ryan, 1971). It is important to understand the fact that the philosophical and moral teaching of Chinese (Confucius and Lao Tzu) had a slight effect on Southeast Asian culture, whereas the Indian ideas deeply influenced much of the region (Moorhead, 1957). It can be said that Chinese culture was not able to thrive in Southeast Asian people's religion, art, or philosophy until it had gone through a process of metamorphosis (Fitzgerald, 1972).

Although it is almost certain that there were pre-historic contacts between China and Southeast Asia, *"prior to the 5th century Chinese sources contain few references to 'Nan Yang' or Southern Ocean, which was the general term used to refer to the Southeast Asia region"* (Andaya, 2001, p.18), since the history of China shows that the Chinese were not interested in Southeast Asia from the beginning, and referred to Southeast Asia as less cultured lands. Some scholars such as Singko or Kohl believe that there were regular commerce contacts between China and Southeast Asia before the 1st millennium, but most historians agreed that the early maritime trade activities between Southeast Asia and China were extremely limited (Ryan, 1971; Andaya, 2001; Munoz, 2006). This speculation has been strengthened by the fact that Chinese did not develop own vessels until the 8th or 9th century (Andaya, 2001). The period between the 5th and the 8th centuries was a remarkable time for Chinese Buddhist pilgrims' voyages to Southeast Asia. Buddhist missionaries and monks from China who intended to reach India, the motherland of Buddha, was preparing themselves with spiritual and intellectual experiences at first in lands of learning; Southeast Asia (Wang, 1992). However, the earliest Chinese merchants and pilgrims did not make any permanent appearance in the peninsula, and these contacts made no cultural influence on Southeast Asian people (Munoz, 2006; Tan et al., 2005).

At the time of the Ming Dynasty, in the beginning of the 15th century, China reversed its restrictive trade policy under Emperor Yongle's reign, resulted in more economic contacts with Southeast Asian ports (Moor, 1986). (After the Mughal's domination on the Silk Road, Chinese decided to use Sea Routes to contact the west). Melaka was one of the ports, where its ideal geographical location made it the most favourable port for China to appoint for commerce activities. At the time of the Young Lu's naval supremacy, between 1408 and 1433, seven imperial voyages under the Muslim Admiral Cheng Ho's supervision was sent to Melaka, which caused a significant influence on Melaka's politics and economic (Hoyt, 1996). In 1409, the Melaka's king signed an alliance with royal court of China, whereby China proclaimed Melaka a kingdom and supported the city against the foreign suzerainty of Siamese and Javanese kingdoms (Hoyt, 1996; Lim, 2006). The relationship with China was strengthened by the marriage of Sultan Mansur Shah and a Chinese princess, Hang Li Po in 1460s (Buyong Adil, 1974; Dumarcay and Smithies, 1998). The princess together with five hundred Chinese men and women who came with her, converted into Islam and settled on a hill outside Melaka, where came to be known as Bukit China-China Hill- (Vlatseas, 1990). Perhaps the earliest cultural assimilation between court of Melaka kingdom and China happened during this time.

The Melaka kingdom era, in the 15th century, is often taken to mark the beginning of Chinese cultural appearance in Peninsula Malaysia (Tan et al., 2005). Even though Kohl claims that the first appearance of Chinese in the peninsula goes to the Three Kingdoms era, back to the 3rd century (Kohl, 1984), most of the historians have implied there were no Chinese settlements in the peninsula, prior to the 15th century, and discerned limited cultural impacts from preliminary connections, which happened mainly through economic, missionary and political activities (Moor, 1986;

Wang, 1992; Tan et al., 2005). The latter belief can be strengthened by the fact that Southeast Asian culture and architecture demonstrate more Hindu-Buddhist indications rather than Chinese evidence in comparison to the profound cultural influence from India that occurred as a result of early and consistent economic contacts (Munoz, 2006). Melaka is probably had the oldest Chinese presence in the Malay Archipelago; the Chinese population there began with a few small settlements outside the historic city (Lim, 2001); however, there was no Chinese settlement in large numbers in Peninsula until the vast influx of Chinese labors during the 19th and 20th centuries (Ryan, 1971). Since that time, Chinese culture and art started to make appearance in Melaka.

In 1511, Portuguese invaders conquered Melaka, very soon re-established the port former trading position and the royal court of China resumed trade with Melaka (Kohl, 1984). In 1557, Portuguese rented Macao (a port in southern coasts of China) under permission of Ming Emperor and in return, they protected China's trade and sea routs from pirates (Crossman, 1991). Having two important ports under their governance, Portuguese managed to expand trading activities between Melaka and Southern Coasts of China (Crossman, 1991). The Dutch conquest happened in 1641; however, in spite of wreaking the port, they managed to reconstruct Melaka (leaving new cultural impacts) and follow former occupier's trading policies (Moor, 1986). Increasing trade activities between China and Melaka since the presence of European in Southeast Asia, from the early of the 16th century attracted numerous individual Chinese merchants from southern China to Melaka, who had to stay in the port for at least five months waiting for seasonal monsoon winds to change and take them back to their homeland (Vlatseas, 1990). As they could not bring their wives on hazardous journey, they formed second home in Melaka (Khoo, 1996). The offspring of such

inter-marriage are called Baba and Nonya for womenfolk (Tan et al., 2005). It can be said that it was only after the arrival of *" western colonial forces in Melaka from the 16th century onwards that the Chinese population of the Peninsula increased significantly"* (Khoo, 1996, p.18). The Baba Chinese established their community and culture largely in Melaka -and are still prominent in the town today- (Vlatseas, 1990). Between the 18th and the mid 19th century Babas were wealthy, educated, and elite, from white-collar community, had cultural influence on Melaka and were treated differently by European authorities. They were Chinese in religions and practices, Chinese and Western in architecture and Malay in language, customs and cuisine (Khoo, 1996).

It was only after the 19th century that numerous Chinese labors and craftsmen migrated to Peninsula due to political riots, economical distresses, and natural catastrophes in China and brighter prospects in Southern Seas regions (Pan, 2006). These Chinese were from the under-privileged social class who made little or no assimilation to Malay art and culture (Ryan, 1971). Chinese migrants in Melaka, whether are merchants or labors can trace their origins back to the coastal provinces of southern China, mainly Guangdong, Fujian, Zhejiang and Jiangxi (Andaya, 2001). While still loyal to their Chinese heritage, Chinese settlers in Melaka yet had to adapt to the new land environment and traditions and as a result Chinese communities with hybrid identity unique to the multicultural society of Melaka were established (Clammer, 2002). Chinese communities in Peninsula in spite of refusing to abandon their traditions, art and architecture, adjusted to indigenous Malay culture and local climatic condition and as a result created an amazing architectural language that is known as Straits Chinese architecture.

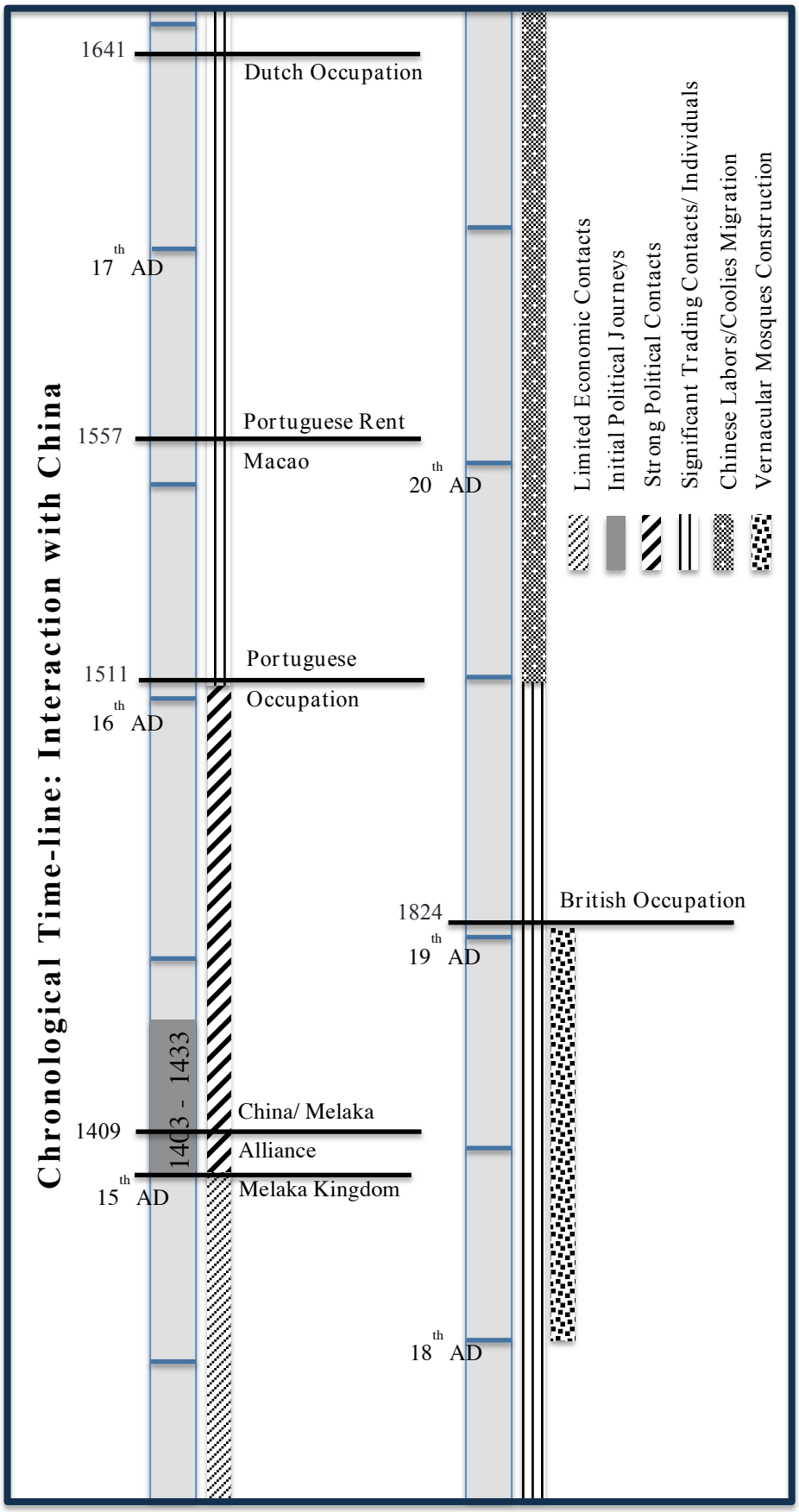


Figure 3.21-: Chronological Time-line- Interaction with China
Source: Harrison, 1967; Ryan, 1971; Vlatseas, 1990; Andaya, 200; Munoz, 2006; Pan, 2006

3.3.1 The Architectural Concept and Style

As the earliest cultural assimilation between China and Melaka happened during the Melaka kingdom era, it is probable that the earliest integration of the Chinese and Malay architecture happened during this period (Probably just in imperial buildings). However, there is no evidence has been remained from the Melaka kingdom period, so the study on earliest Chinese architectural appearance in Peninsular Malaysia is impossible. The earliest Chinese practice in Melaka that has remained until this time, is Bukit China, where is reputed to have been given originally to the daughter of a Chinese emperor, who was sent to marry Sultan Mansur Shah and her handmaidens (Lim and Jorge, 2006). After the 16th century Melaka's increasing importance as a trading port, led to the growth of the town's population, and there was a steady flow of foreigners from various races, most notably those of Chinese descent who brought with them their culture, customs and architecture (Yeang, 1992). In the 17th century, when Chinese craftsmen helped Dutch authorities to reconstruct Melaka (Purcell, 1951) and in the 19th century built British governmental buildings (Kohl, 1984), Chinese architecture started to make stronger appearance in Melakan buildings. The early architectural influence of the Chinese led to a style that might be described as 'Straits Eclectic', whereby Chinese traditional architecture was combined with Malay and Western architectural styles and construction techniques (Yeang, 1992).

All the other Chinese immigrants in Peninsular Malaysia are from the coastal lands of the Southern China, except for the earliest Chinese settlers in Melaka in the 15th century, who were imperial court related people (Kohl, 1984; Pan, 2006). The Chinese in Melaka, whether wealthy merchants from Canton, the most famous port in China, or coolies from Amoy, seeking job opportunities in the peninsula came from Southern provinces of China (Kohl, 1984). They remained faithful to their homeland

religions and beliefs and constructed buildings inspired by their own traditional style from Southern Chinese architecture (Chen, 1998).

"Whatever the function is, the Chinese architecture in the peninsula follows a set of building principles in terms of fitness of purpose, serviceability, and aesthetic" (Kohl, 1984, p.21). Chinese architecture in Peninsular Malaysia is represented in one sense, an essential harmony with nature (Kohl, 1984). The Chinese buildings are the embodiment of the feeling for cosmic pattern and the symbolism of the directions, the seasons, the wind and the constellations (Kohl, 1984). The underlying ideas of Chinese architecture are the courtyard, stressed roof, visible structural components and the application of colour (Kohl, 1984). The other main architectural characteristics or elements in Chinese examples in the peninsula are modest size, three-section gable roof, curved roof ridge, elevated gable walls and ornamented wall friezes underneath the roof air well, high ceiling, full high windows, deep overhangs, overlapping roofs, curved gable ends, glazed ornamental tiles, stucco decorations, and jian nian-technique ornamentations (Lim, 2001). The unique hybrid identity of Chinese in Peninsular Malaysia displayed itself beautifully in Straits Chinese architecture, in various forms and functions such as temples, pagodas, kongsi or clan houses, terrace houses and shophouses.

Although there are various discussions available about Chinese architecture in Peninsular Malaysia, such as Kohl (1984) *"Chinese Architecture in the Straits Settlements and Western Malaya: Temples, Kongsis, and Houses"*, Khoo (1996). *"The Straits Chinese: a cultural history", Chen (1998) "The Encyclopedia of Malaysia: Architecture", Vlatseas. (1990) "A history of Malaysian architecture", and Yeang (1992) "The architecture of Malaysia",* none of them provide in detail arguments

about the influence of Chinese architecture on Malaysian architectural scenery, especially the vernacular mosques.

3.3.2 Building Typologies

3.3.2.1 Temples

Since the permanent presence of Chinese in the peninsula, numerous Chinese temples were built throughout the region to be among the first buildings, which Chinese lavished their wealth on (Yeang, 1992). *" They are dedicated to a local combination of Buddhist images, Taoist heroes and spirits, and Confucian maxims"* (Kohl, 1984, p.85). It means a temple in the peninsula, normally is not dedicated only to one of the cults of Buddhism, Confucianism or Taoism, and can serve the followers of the three religions at the same time; however, generally in China, despite the similarities in architectural qualities of Confucian, Taoist, and Buddhist temples, these temples serve as sanctuaries just for one of the mentioned cults. Moreover, in contrast to temples in China, which usually are located in religious complexes, Peninsular Malaysia's temples usually are individual structures (Kohl, 1984); even so, there are some examples in the peninsula, which present the temples in a complex with pagodas and memorial arches.

Instead of the imperial double-hipped roof of Northern China, temples in the peninsula hold the gable roof in 3 sections, following the Southern China's style. The middle section is usually raised, and the inward curved main ridges, and raised copings that separate the roof sections, are profusely ornamented (Kohl, 1984). The elongated corners of roof's eaves are curved upward, whilst dragons, Phoenix and other religion or symbolic figures in colourful ceramic pieces decorate the ridges and the copings (Yean, 1992). Two decorative methods, which have been used excessively in the Chinese temples in the peninsula, are "jian nian" (means cut and paste from ceramic

shards) from Fujian, and Shiwan from Guangdong that is a molding technique (Khoo, 2001).

The main characteristic for Chinese temple architecture is courtyard planning, emphasis on roof, exposure of structural element and colour (Kohl, 1984). In general, Chinese temples are planned around the concept of the walled compound, oriented on an axis running north to south, which illustrates the Chinese affinity for south-facing buildings on a symmetrical plan (Kohl 1984). The Chinese temples in the peninsula contain a central building with the altar inside, facing the courtyard, and two side buildings (Yean, 1992). In contrast to Classical Chinese Architecture in Northern China, where the component of the base has a special place in symbolism, aesthetic means and style, the temples in Peninsular Malaysia do not represent this architectural component, and generally sit on the ground directly, similar to what can be seen in commoners' architecture in Southern China. However, the idea of the base has been borrowed by other architectural typologies in the peninsula, such as Chinese opera houses - refer to Figure 3.23.

(a)

(b)

(c)

Figure 3.22: Cheng Hoo Teng Temple, Melaka, 17th a) Overall View b) Ornate Gable Wall c) Ornate Raised Main Ridge and Copings
Source: Field Work

Figure 3.23: The Opera House, Melaka (The base is represented with colour-paintings ornamentations)
Source: Field Work

3.3.2.2 Pagodas

In every region where Buddhism has gotten significant believers among Chinese, the pagodas have been built in various styles and materials. Although the Chinese pagoda derived from the Indian Buddhist stupa, its shape has little in common with the range of stupas found throughout south Asia. As stated earlier, the form changed from a circle to a square, and the pedestal grew into a multi-layered base, incorporating rows of niches for images to creat architectural monument of the pagoda (Fisher, 1993).

Pagodas found in Peninsular Malaysia vary in size and structure but mostly are of the tower-style pagoda. These monuments can be found in many temple complexes, such as the Khoon Yam Temple in Kuala Lumpur, where a three-storey pagoda is constructed of brick and stucco, and is used for burning holy papers in the courtyard (Kohl, 1984). The most widely publicized pagoda in Malaysia is the Ban Po Shu Pagoda of the Ten Thousand Buddha, on the grounds of the Kek Lok Si Temple complex in Penang; however, this eighty-foot high structure is not a purely Chinese pagoda in architectural style (Kohl, 1984). The pointed arches are of Indian influences, and the gallery at the upper most part is of European influence (Yeang, 1992). But in the overall view, clearly it has been erected under the storing influence from Chinese pagoda.

(a) (b)

Figure 3.24: The Pagodas in Peninsular Malaysia- a) Ban Po Tha Pagoda, Penang
Source: In Flikr. Retrieved April 25, 2013, from
https://www.flickr.com/photos/sheeprus/3599529531/in/photolist-4rHqJF-6u5wHZ-89LTFp-6u5x5x-6u9GDL-6u9H21
b) Chin Swee Pagoda, Pahang
Source: Field Work

3.3.2.3 Shophouses

When Chinese traders settled in Peninsular Malaysia permanently, they established shophouses, which in time became the principal feature of Malaysian towns (Lim, 2001:88), and one of the most common types of Chinese building in Malaysia. First appearance of shophouses occurred during the Dutch occupation in Melaka (Vlatseas, 1990). These early shophouses had only one storey, with the living area in the rear and commercial area in the front, while the construction techniques were based on locally available materials combined with Chinese architectural influences (Yeang, 1992). " Shophouses had a basic pattern both in floor plan and elevation, although both aspects have evolved over the course of time" (Kohl, 1984:175).

The later shophouses generally comprise of two stories, the ground floor functions as a shop, and the upper floor as a residential unit (Lim, 2001). The roofs of shophouses are usually composed of three or four gable roofs, whose ridges run transverse to the axis of the shophouse (Kohl, 1984). The width of the shophouse structure is usually between 13 and 20 feet, and the depth of which is at least two or three times its width (Yeang, 1992). There is generally a central air-well to provide natural light and ventilation for building and also to collect the rainwater (Lim, 2001). The shophouses type may be classified as "Utilitarian" with simple wooden shutters and a minimum of decoration, "Neo-Classical" with elaborate Roman and Greek columns, and "Art Deco" with simplified lines and geometrical patterns (Yeang, 1992). Some of these shophouses hold a façade decorated with colour-paintings, colours, and sheen ceramic tiles.

CHAPTER 4

RESEARCH METHODOLOGY

4.1. Introduction

To analytically justify the idea that Melaka vernacular mosques have gotten influence from Chinese architecture and to architecturally determine these influences, the Historical-Comparative Research Method with the focus on causal explanations of history has been applied. Since the influence of Chinese art and architecture on Melaka mosques is a result of direct physical contact between these two regions (the review on historical development of Melaka verified the immediate interaction between Chinese merchants and Melakan entities), this research has applied Historical-Comparative Research Method through the Lens of Covering Law model suggested by Groat and Wang (2002). The Historical-Comparative Research method comprises various stages: (i) searching and collecting the evidence, (ii) identifying the evidence, (iii) organizing the evidence, (iv) evaluating and interpreting the evidence, (v) constructing a narrative from the findings (Nueman, 2003). Considering the objectives, this research employs interpretative and comparative analysis among three architectural styles: Classical Chinese Architecture in Mainland China and Peninsular Malaysia, and six selected vernacular mosques in Melaka (for sampling process refer to 4.2.5 Sampling Procedure). It is vital to study the architectural development of both regions (China and Peninsular Malaysia), since the understanding of the historical nature of a phenomenon is often as important as understanding the phenomenon itself (Salkind and Rainwater, 2009). In a historical-comparative method, the researcher examines a great diversity of data, by extensive bibliographic work, to collect relevant evidence (Nueman, 2003). Moreover, in this research to obtain an accurate and factual comprehension on Melaka mosque architectural style, several field studies on six

Melakan mosques as case studies carried out. The employment of Melaka mosque architectural style case study and qualitative data in this historical-comparative research makes this research a rigorous study of a limited number of architectural examples, in which meanings and contexts are essential (Nueman, 2003). The study of randomly selected mosques draw attention to the question of what specially can be learned from each single mosque, so the researcher should concentrate on experimental and observational knowledge of each case study (Denzin et al., 2005). Each selected Melakan mosque in this study has been explored analytically by interpretation of physical appearance and measurements of plans and elevations. Since in this method the researcher's point of view plays a crucial role in the interpretation and narration, they should be accurate about facts and try to avoid fallacies (Nueman, 2003). Figure 4.1 illustrates the process of Historical-Comparative Research method.

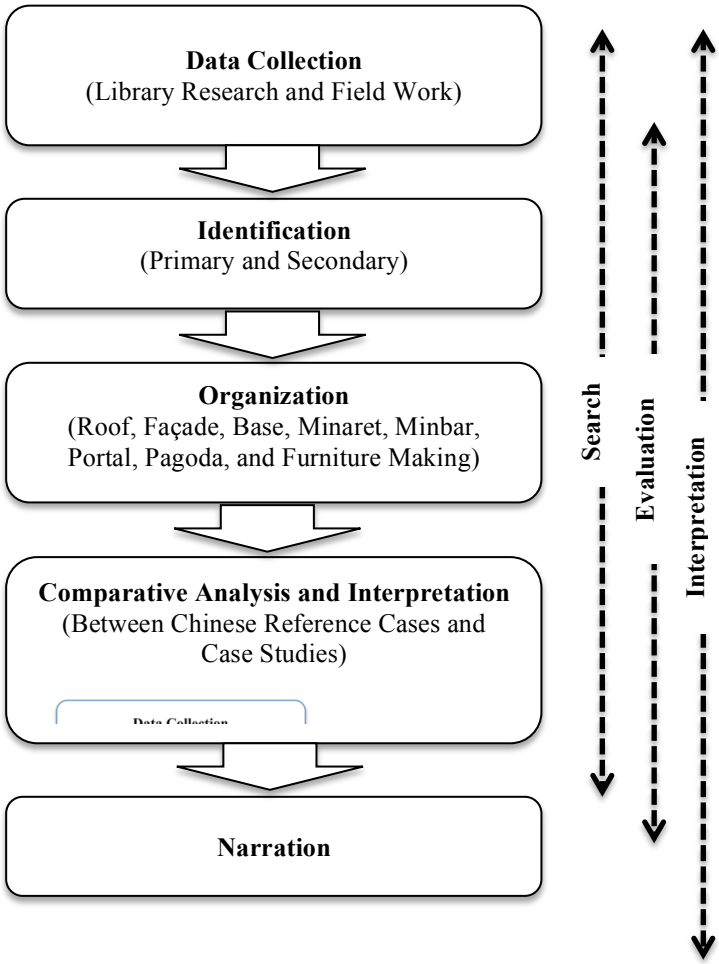


Figure 4.1: Diagram of Interpretive-Historical Research Method

4.2 Research Design

This study is a combination of comparative historical research and interpretative- observational descriptive method. This research intends to compare Chinese buildings with selected vernacular mosques in Melaka and interpret the influence of Chinese architecture on these mosques. As a result, interpretivism is the most suitable paradigm for this study. Organizing collected material into primary and secondary data, evaluating their verification and relatedness, comparing the data, interpreting the findings, and finally making a conclusion and bringing it into a narration are all the main stages in this research. It is also needed to note that interpretation is active in all of these stages, which may not be followed in discrete steps but most of the time are followed in parallel through the process (Nueman, 2003). Following explanation on each mentioned step gives more clarification on the research design. Figure 4.2 illustrates the diagram of the research design.

4.2.1 Evidence Collection and Identification

Through this phase, relevant historical and architectural evidence has been compiled and then identified in primary and secondary data. The primary data holds the evidence, which has been obtained through the observational and first-hand encounter with case studies. The secondary data has been compiled through library research from recorded historical and architectural documents such as texts, photos, sketches, and drawings from published sources such as books, journals, articles, thesis and dissertation, visual documentation, and newspaper.

4.2.1.1 Primary Data Collection

In this step, observations and lore carried out in order to gain intimate knowledge of vernacular mosques in Melaka by first-hand encounters with case studies. The case studies were visited and their architectural components were

observed. General information, sketches of the overall physical appearance, measured drawings of plans and elevations, field notes and photographs were obtained at this step to thoroughly describe each selected mosque.

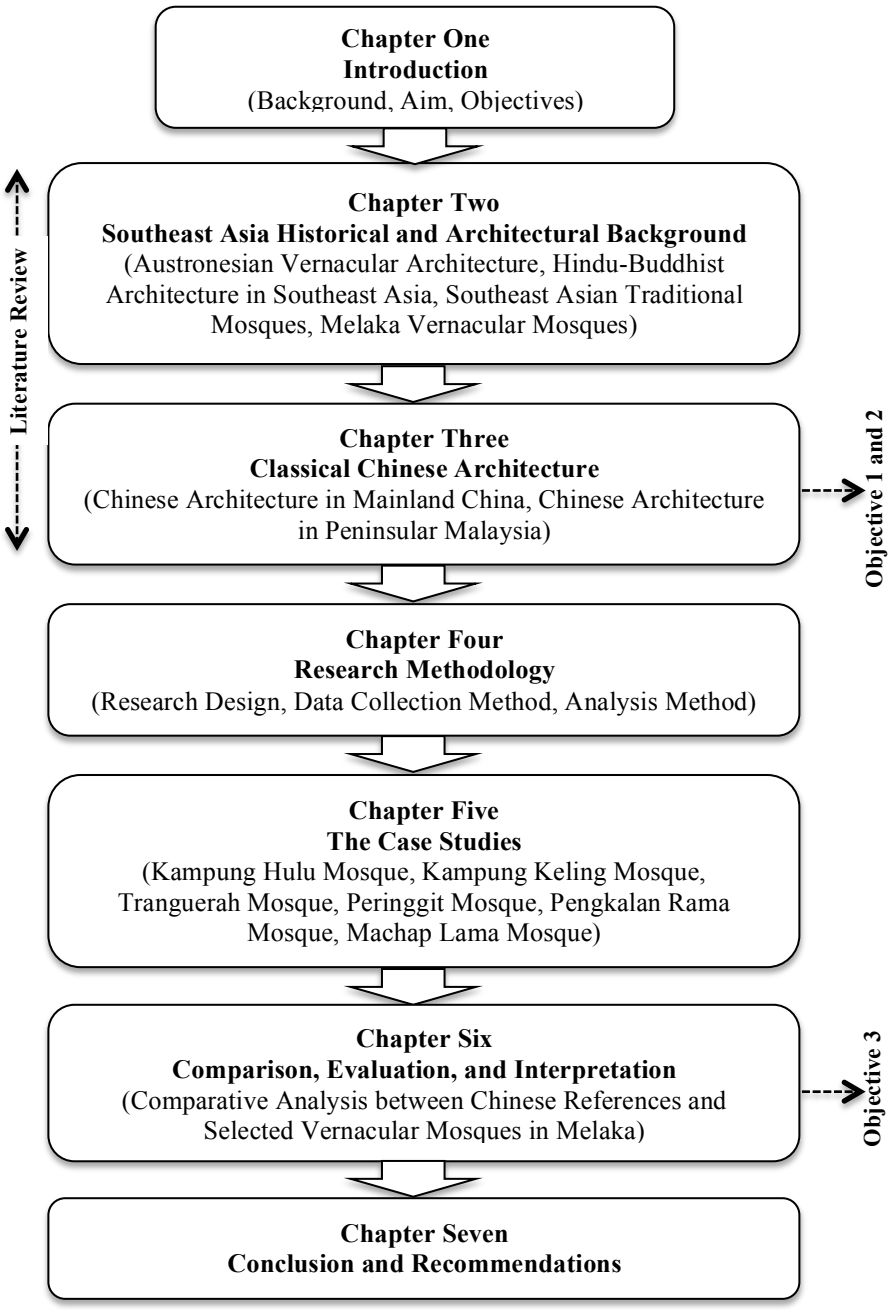


Figure 4.2: Diagram of Dissertation Design

4.2.1.2 Secondary Data Collection

All the collected evidence through the literature review is organized under secondary data. In order to reach the first and second objectives of this research, this study collected as much evidence as possible about the historical and architectural background of Classical Chinese architecture. Northern Chinese architecture, Chinese-Islamic architecture, Southern Chinese architecture as architecture of commoners, and finally Chinese architecture in Peninsular Malaysia, especially in Melaka have been meticulously explored to attain a general but a comprehensive acquaintance with Classical Chinese architectural style, characteristics, and typologies.

To achieve the third objective, Southeast Asian vernacular mosques in general and vernacular Melaka mosques in particular are studied carefully. The records about architectural development of Southeast Asia mosques should be considered as important evidence as they reveal deeper layers of this region's architecture. The study of Southeast Asian historical background leads us to Austronesians and Hindu-Buddhism influences, which have strongly inspired Southeast Asian architecture. The followings, different steps of secondary data collection have been discussed.

Step 1: Data Collection- Southeast Asia Historical and Architectural Background

In order to comprehend vernacular Melaka mosques architecture, it is essential to obtain a complete apprehension on Melaka's historical background, its architectural development and various interactions between this port and other regions. Due to limitations on Melaka’s historical and architectural documentation (the Peninsula itself has the same limitations), Southeast Asia region has been studied to collect relevant records as the lands of Indonesian Archipelago and Peninsular Malaysia can be

discerned sharing more or less similar background. This similarity shows itself, especially in architectural terms.

Moreover, it is essential to study historical development in Southeast Asia in the actual flow of time from the early dates to the latter years to attain a precise acquaintance with its architectural development. To do so, the Austronesian world, as the ancestor of Southeast Asian people has been reviewed. In the next step, Hindu-Buddhist architecture in Southeast Asia has been studied, since Hindu-Buddhism was extremely strong in the region for about fourteen centuries.

Preceding the studies on vernacular mosques in Melaka, Southeast Asia vernacular mosques' architectural style has been examined to gain an overall but yet in depth knowledge on this style. Moreover, Southeast Asian traditional mosques' studies help the mind in the evaluation and interpretation process by introducing the valuable architectural examples, in which the special features and characteristics of indigenous Southeast Asian and Hindu-Buddhist influences are pointed out.

Step 2: Data Collection- Chinese Architecture in Mainland China and Peninsular Malaysia

Since this research seeks the influence of Chinese architecture on vernacular mosques in Melaka, it is obvious that great attention should be given to Classical Chinese Architecture. To attain a rigorous and thorough understanding over Classical Chinese Architecture and achieve ideas about Chinese architectural characteristics, meanings and elements, an attempt started to collect evidence about Classical Chinese buildings in Mainland China, as well as Peninsular Malaysia. Since both The Imperial powers and individual commoners from China engaged in contacts with Melaka, various building types from Chinese architecture are selected to trace influences in

Vernacular Mosques in Melaka. Architectural characteristics and building typology such as palaces, imperial temples, Buddhist architecture, Islamic architecture, and Southern Chinese architecture as architecture of commoners were studied to gain evidence related to Classical Chinese architecture in Mainland China.

The rigorous study of Classical Chinese architecture in Peninsular Malaysia provides evidence that is determined as the source of influence in vernacular Melaka mosques. Temples, shophouse, and pagodas were studied in this step. Through this section of literature review, various related architectural texts, drawings, sketches, and photos have been collected to prepare case references for the comparison and interpretation process. The literature review has been carried out based on the diagram, illustrated in Figure 4.3.

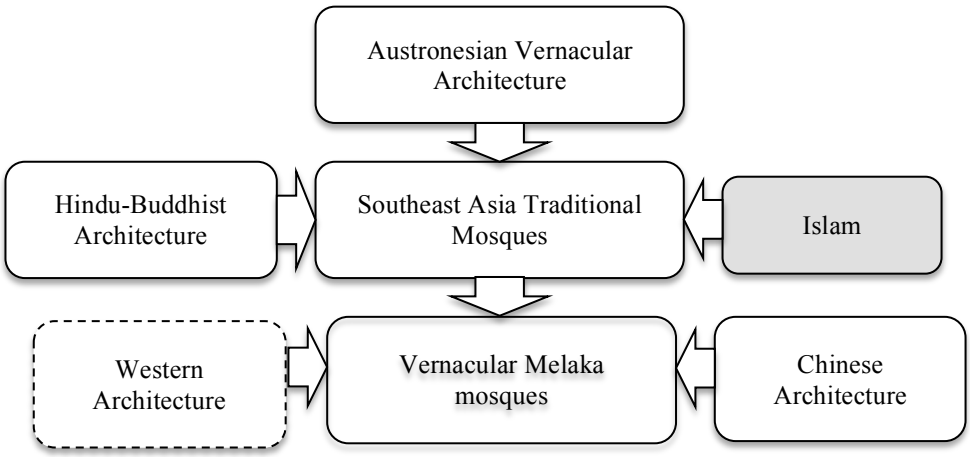


Figure 4.3: The Diagram of Architectural Influences Process on vernacular Melaka mosques

4.2.1.3 Data Collection Methods

Considering the objectives, this research has applied qualitative method to collect secondary data. Since this research focuses mainly on historical and architectural recorded materials, qualitative research approach was found to be the most suitable method for data collection. Qualitative method, as data collection technique requires the collection of an array of related materials, such as historical and

architectural texts, cultural texts and productions, artifacts, and interviews (Denzin et al., 2005). Furthermore, to collect primary data case study approach has been carried out.

4.2.1.4 Source of Data

This study placed a great emphasis on both primary and secondary data sources, as both are essential to achieve an accurate answer for the research's question. The primary data was collected from selected mosques through the field works and lore. Prolonged time has been spent at the sites to study each mosque and to reflect and revise its nature, historical background, physical and aesthetic values, and special architectural features. Sketches, measurements and drawings, field notes and photographs are some of the instances that have been obtained from this source of data.

The secondary data were acquired from published sources such as books, journals, articles, thesis and dissertation, visual documentation, and newspaper. The library research was carried out predominantly in the Main Library, as well as the Built Environment Library of University Malaya. Furthermore, the databases accessible from the Main Library were searched for more relevant attainable materials and data. This research has often used journal resources available in the EBSCO databases as well as in jstor.org. In addition, Google Scholar was used to acquire more relevant materials. National Library of Malaysia, Kuala Lumpur Library, National Archive (Arkib Negara Malaysia), Melaka Islamic religious Department's archive, PERZIM and Melaka Historic City Council's archive are of other resources, by which this research has enriched its literature review section.

4.2.2 Evidence Organization

In comparative-historical research, the findings must be arranged in an analytical manner (Groat andWang, 2002). Findings may be identified based on various aspects such as Primary/ Secondary, Published/ Unpublished, or Official/Colloquial (Groat andWang, 2002). After identification stage, the findings may be organized based upon different approaches such as Researcher's mind (Accuracy/ Logic/ Love of order), Collection (By topic/ By time/ By internal logical order), or Relatedness of events and ideas (Groat and Wang, 2002).

In this research, as mentioned earlier, the collected evidence was identified as primary (data related to case studies obtained from fieldwork) and secondary (data related to Classical Chinese architecture gained during literature studies). In the next step, the primary data was ordered into six titles (the names of the case studies): "Kampung Hulu", "Kampung Keling", "Tranguerah", "Peringgit", "Pengkalan Rama", and "Macap Lama", while the secondary data was organized into two titles: "Classical Chinese Architecture in Mainland China" and "Classical Chinese Architecture in Peninsular Malaysia". Within the titles in secondary data, the collected material is organized base on the building typology, for instance, in "Classical Chinese Architecture in Mainland China" the evidence is classified as imperial temples, palaces, Buddhist structures, Chinese mosques, and vernacular houses, while in "Classical Chinese Architecture in Peninsular Malaysia" the data is classified as temples, shophouses, and pagodas.

To organize the data in a more systematic manner, the collected evidence for each studied building is ordered into different sub-titles. Three different architectural component, which are of the most fundamental features in Classical Chinese Architecture have inspired this research for furthur classification. The roof, the facade, and the base are the elements that Liu (1989) suggested as the basic components of

Classical Chinese buildings, which can be seen in almost all of the case studies. As a result, gattered evidence related to each studied building was organized into “roof”, “façade”, and “base”. In order to cover all the architectural features and characteristics in the case studies, “minaret”, “minbar”, and “portal” were added to the mentioned sub-titles. To provide an accurate comparison in the next step, besides the mentioned sub-titles of the “roof”, “façade”, and “base”, the “pagoda” and “Interior design and furniture making” were added into the “Classical Chinese Architecture in Mainland China” and “Classical Chinese Architecture in Peninsular Malaysia” titles.

Moreover, the compiled materials related to Southeast Asian mosques and Hindu-Buddhist architecture in Southeast Asia was identified as secondary data as the supplementary evidence. It should be noted that in the organization process a great attention must be paid to the authenticity and relatedness of evidence.

4.2.3 Findings Comparative analysis and Interpretation

This step provides comparisons by presenting the reference cases from Classical Chinese practices from the most developed Dynasties, especially the Ming Dynasty, as the first cultural assimilation between China and Melaka begun during this dynasty, Chinese practices in the peninsula, as well as the case studies. As mentioned earlier, pictures, drawings of plans and elevations and writings on descriptions or analysis of imperial temples, palaces, Buddhist structures, and vernacular houses in Mainland China, as well as the temples, shophouses, and pagodas in Peninsular Malaysia were organized to “roof”, “façade”, “base”, “pagoda”, and “interior design and furniture making”. Pictures and drawings of plans and elevations of each one of the case studies were organized as “roof”, “façade”, “base”, “minaret”, “minbar”, and “portal”. Through the precise comparisons between the mentioned sub-titles in Classical Chinese architecture and case studies and scrupulous interpretation, in which researcher’s perspective and personal observations plays an important role, the

architectural analogies between the primary and secondary data have been detected and presented in “Chapter Six: Analysis, Evaluation and Interpretation”.

To achieve a better classification in findings, the mentioned sub-title would be compared from various aspects of ornamentation, material, form or fenestration, and proportion. The roof section was analysed based on ornamentation and material, the facade was analysed based on ornamentation, form/fenestration and proportion and finally, the base was analysed based on ornamentation. Other architectural elements in the mosques such as the minaret, portal, and minbar that cannot be designated under any of the mentioned architectural components will be analysed separately based on their form and ornamentation. Table 4.1 shows the architectural components and the aspects, in which each architectural feature will be analysed and evaluated based on.

Table 4.1: Various Architectural Components and Different Aspects Covered in This Study (Author)

Category / Component	Ornamentation	Material	Form/ Fenestration	Proportion
Roof	✓	✓		
Facade	✓		✓	✓
Base	✓			
Minaret	✓		✓	
Portal	✓		✓	
Minbar	✓		✓	

Figure 4.4 shows the diagram of research structure with the focus on different titles and sub-titles, which have been introduced within the primary and secondary data sets.

4.2.4 Narration

The interpretive research must eventually report what has been found through the previous stages, in a narrative: a holistic, robust, plausible description from the

evidence, which has been formed through the researcher's mind (Groat and Wang, 2002).

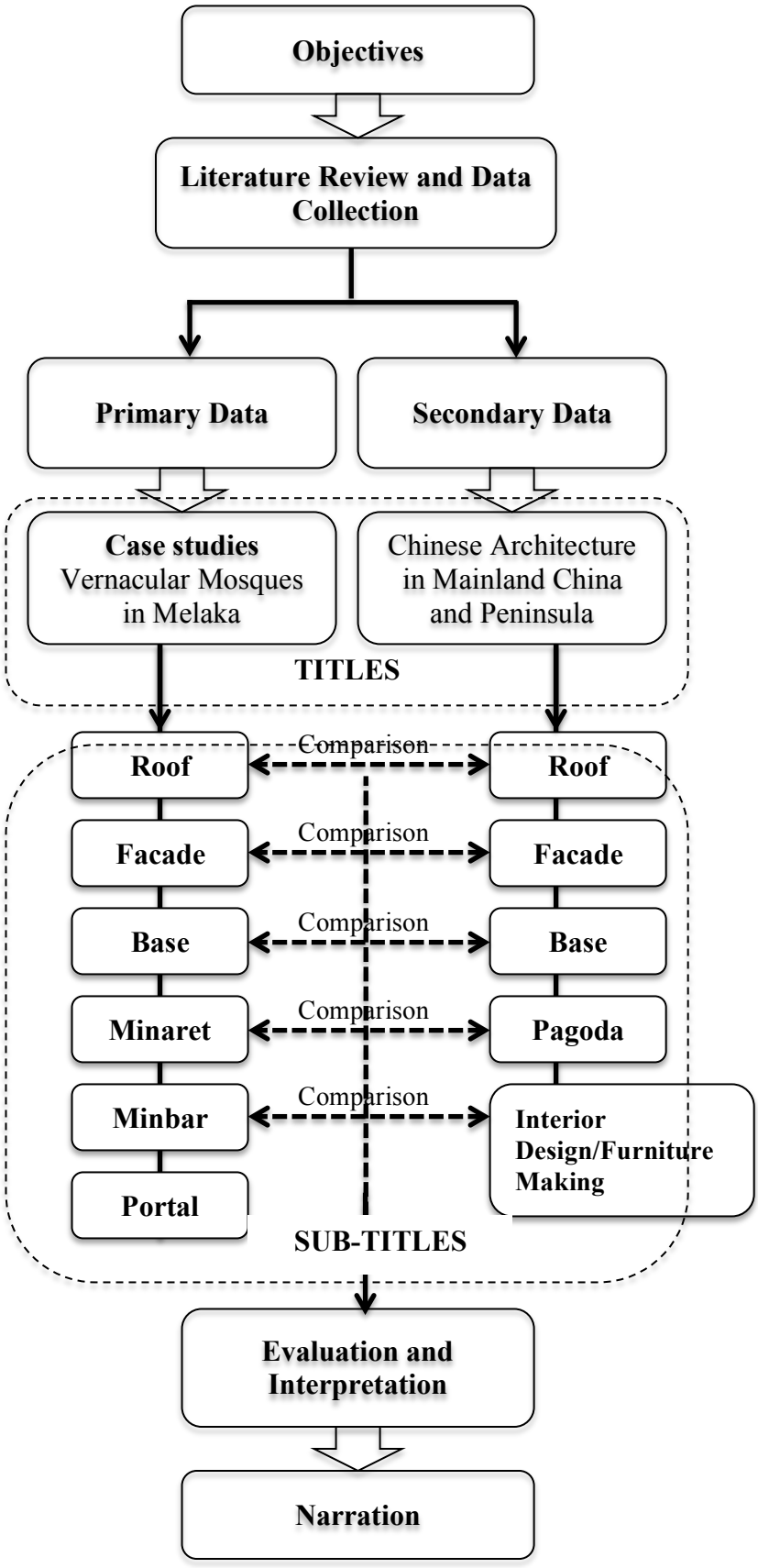


Figure 4.4: Diagram of Research Structure

4.3 Sampling Procedure

Since this study needs an interpretative- descriptive approach toward the case studies, a manageable number of cases must be selected carefully from a variety of examples. In this regard, several steps were taken and various criteria were considered in order to choose the most proper samples as case studies.

Step 1: Through visits to Melaka Islamic Religious Department, PERZIM, and Melaka Historic City Council, a list of 195 mosques in the state of Melaka has been obtained. To avoid sampling errors, a large number of examples were needed in the first stage of sampling procedure. The obtained list holded raw data of recorded mosques in Melaka, Alor Gajah, and Jasin (only the names of the mosques and the imprecise addresses are noted without the construction's date or any other basic information).

Step 2: In comparison to the surrounding towns and villages, the city of Melaka demonstrates longer history and stronger influence of Chinese presence, so this study intends to focus on the city of Melaka. As a result, district consideration was the first criterion in the sampling process, so 112 mosques in Alor Gajah, and Jasin were screened out to narrow down the list of mosques in the State of Melaka into 83 mosques only in the city of Melaka.

Step 3: Since this study concentrates on vernacular mosque style, the second criterion in sampling procedure was style consideration. To fulfill this criterion the list of mosques in Melaka was classified into vernacular and modern styles. This task was carried out through prolonged search in related websites such as websites of Portal Masjid Negari Melaka, PERZIM, IslamGrid, and Hang Tuah Municipal Council, as well as telephone contacts to the mosques' managers in the cases that no information or photograph was found from the websites. Within 83 identified mosques in Melaka, 35 mosques in modern style, as well as 16 cases that no information or photograph was

retrieved about were screened out to narrow down the samples into 33 vernacular mosques in Melaka.

Vernacular style refers to those mosques that are built based on environmental and ethnical considerations, in contrast to modern mosques in Malaysia, which were built since the independence and follow advance construction methods and contemporary design, or ideas from Middle East, Turkey, or Northern Africa (Ahmad, 1999; Tajuddin, 2007).

Step 4: To make the sample identification process easier, in this stage the identified vernacular mosques were arranged in the order of the construction date.

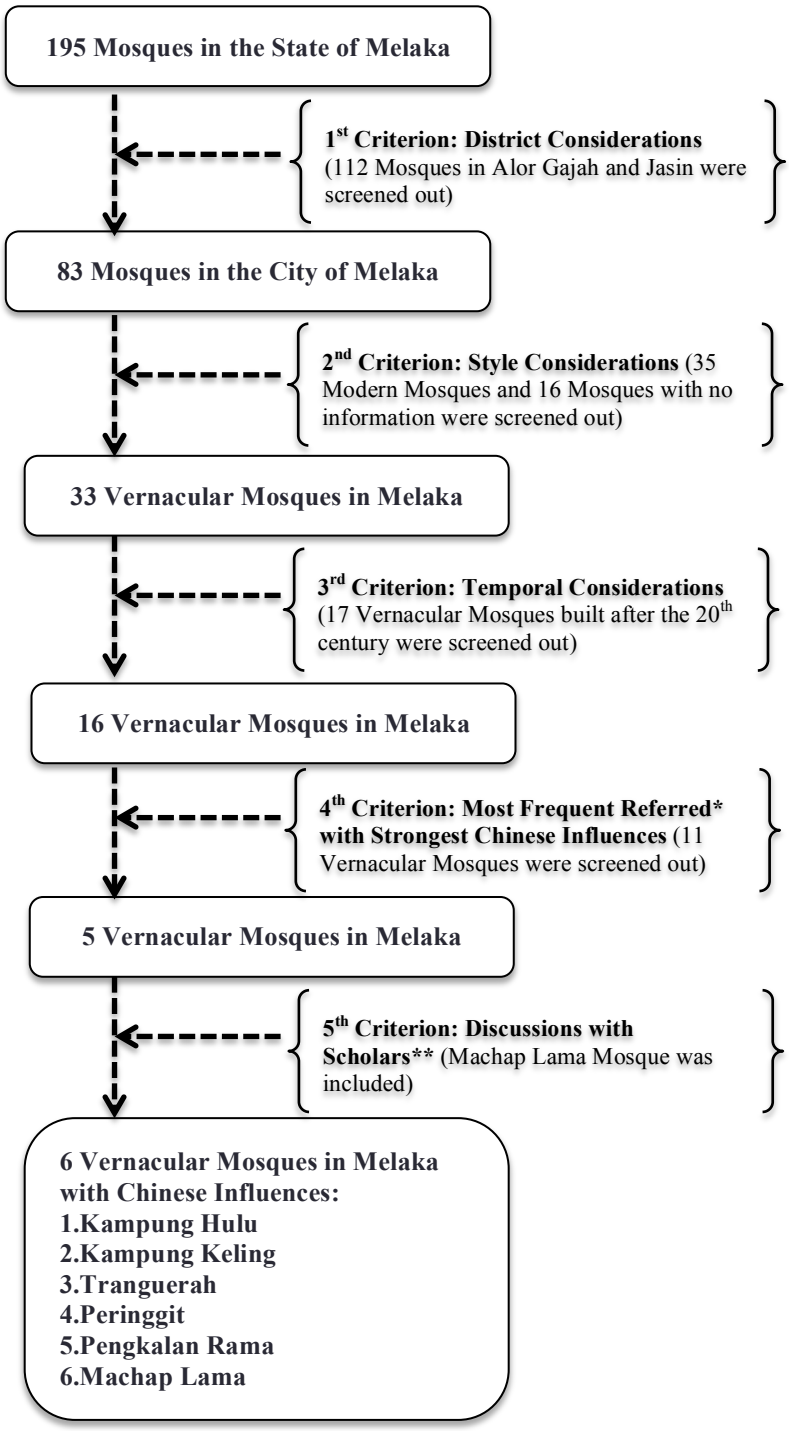
Step 5: The third criterion in sampling process was the temporal consideration since the earliest examples of vernacular Melaka mosques were considered as the best suitable samples for the study. As a result, among 33 identified vernacular mosques in Melaka, 17 mosques, built after the 20th century was screened out to achieve a list of 16 vernacular mosques in Melaka.

Step 6: To narrow down the samples into a manageable number, these 16 vernacular mosques were visited. Although the temporal considerations played an important role in sampling procedure, other reasons also contributed to the selection of the case studies. The more frequently referred Melakan mosques in the recorded materials, such as Vlatseas (1990), Yeang (1992), Chen (1998), Tajuddin (2000), and Nasir (2004), as well as the mosques that represent stronger Chinese influences have been considered as best samples.

Step 6: In order to select the most appropriate case studies, several discussions were done with scholars such as Professor Dr. Yahaya Ahmad, who suggested Machap Lama mosque as a case study for this study. After visiting the site, it was clear that this mosque is one of the best cases that demonstrates the Chinese influence and has the great potential to enrich the study. As a result, although Macap Lama mosque was

located in Alor Gajah (in the village of Mchap) and had been eliminated in the second step of sampling process due to the first criterion, it was chosen as the sixth case study since this mosque represents fascinating influences from Chinese architecture.

After careful considerations, the following mosques have been chosen as case studies: Kampung Hulu Mosque, Kampung Keling Mosque, Tranguerah Mosque, Peringgit Mosque, and Pengkalan Rama Mosque, and Macap Lama Mosque. Table 4.1 represents the list of mosques in Melaka, which are classified into vernacular and modern styles (These styles are more defined in Chapter One: 1.2 Research Background). It should be noted that the vernacular mosques in the list are ordered by construction date, while the modern mosques are arranged alphabetically.



* Referred in Vlatseas, 1990; Yeang, 1992; Chen, 1998; Tajuddin, 2000; Nasir, 2004
** Such as Prof. Dr. Yahaya Bin Ahmad who was the Deputy Commissioner of Heritage in Malaysia from 2007 to 2009, Deputy Dean of Faculty of Built Environment, University Malaya from 2005 to 2007, and Head of Architecture Department, University Malaya from 1999 to 2001. He has published various books, academic articles, reviews, and proceedings.

Figure 4.5: The Diagram of Sampling Procedure

Table 4.2: The List of Mosques in Melaka (Melaka Islamic Religious Department and Melaka Historic City Council)

Architectural Style / Mosque Name	VERNACULAR (Construction/Renovation Date)	MODERN (Construction/Renovation Date)
1	Peringgit Mosque (1726/1978,1979)	Al-Alami Mosque (2001 to 2003)
2	Kampung Hulu Mosque (1728/1892,2013)	Al-Ehsan Mosque (1890/1960s)
3	Pengkalan Rama Mosque (1730/1917,1978,2004)	Al-Azim Mosque (1984/1990)
4	Kampung Kling Mosque (1748/1872,2013)	Ayer Keroh Mosque (1985)
5	Trengkera Mosque (1750s/1850s)	Ayer Molek Mosque (1895)
6	Banda Hilir Mosque (1820/1960)	Balik Bukit Mosque (1966/1992)
7	Hujung Pasir Mosque (1829)	Batang Tiga (1917/1974)
8	Telok Mas Mosque (1840)	Batu Berendam Mosque (1950)
9	Duyong Mosque (1850-1908/1973)	Bertam Ulu Mosque (1921)
10	Bukit China Mosque (1865/1978)	Bukit Beruang Mosque (1967/1970)
11	Kandang Mosque (1870/1968)	Bukit Darat Mosque (1900/1974)
12	Kampung Alai Mosque (1890/1925,1986)	Bukit Katil Mosque (1970)
13	Bakar Batu Mosque (1890/1988)	Bukit Kechil TBR (1985-2004)
14	Limbongan Mosque (1890/1965)	Bukit Lintang Mosque (1897/1972)
15	Pokok Asam Mosque (1890/1935)	Bukit Nibong Mosque (1947)
16	Bukit Piayu Mosque (1897)	Bukit Pegoh Mosque (1940/1972)
17	Bukit Bayan Mosque (1900's)	Bukit Rambai Mosque (1985)
18	Semabok Mosque (1900/1970s)	Kampung Tun Razak (1973)

Table 4.2, Continued

Architectural Style / Mosque Name	VERNACULAR (Construction/Renovation Date)	MODERN (Construction/Renovation Date)
19	Pasir Puteh Mosque (1903/1936)	kem Terendak Mosque (2000)
20	Paya Rumput BT 8.5 Mosque (1903/1927)	Kerubong Mosque (1880/1947)
21	Paya Rumput Jaya Mosque (1903/1926)	Padang Temu Mosque (1900/1965)
22	Bukit Kechil Mosque (1917/1970)	Pantai Kundur Mosque (1993)
23	Bukit Baru Mosque (1918)	Pantai Rombang (1962/1986-2003)
24	Bukit Durian Mosque (1919/1950)	Pantai Tanah Merah Jaya (1925/1976)
25	Bukit Gedong Mosque (1919/1995)	Paya Mengkuang Mosque (1941/1976)
26	Klebang Besar Mosque (1924/1970s)	Pengkalan Ranggam Mosque (1870/1968)
27	Tangga Batu Kechil Mosque (1924/1980s)	Pernu Mosque (1984)
28	Tangga Batu Pekan Mosque (1925/1995)	Selat Mosque (2006)
29	Bertam Maliam Mosque (1927/1978)	Sungai Putat Mosque (1910/1963)
30	Tanjung Keling Mosque (1930)	Tun ABD Ghafar Mosque (1900's/1970s)
31	Jamek Serkam Mosque (1953)	Tambak Balai Panjang (1950s)
32	Taman Merdeka Mosque (1999/2004)	Tambak Paya Mosque (1928/1969)
33	Pengkalan Batu Mosque (2001-2003)	Tampoi Mosque (1960)
34		Tanah Merah Kerubong (1925/1976)
35		Ujong Pasir Mosque (1829/1979)

* The First 5 vernacular mosques in the list are perceived as the earliest mosques erected in Melaka, which alongside the Machap Lama mosque have been chosen as case studies in this study. (All selected mosques have been highlighted in Appendix A)

4.4 Historical-comparative research strategies

There are various strategies that can be applied in a Historical- Comparative Research in order to collect related material, achieve research objectives and finally answer research question. In this section, different strategies that have been employed in this study to access the answer of research question have been explained. These strategies have been derived from Jean-Pierre Protzen's eight historical-comparative research strategies (Groat and Wang, 2002).

Strategy 1: On-Site Familiarity

The purpose of this strategy is the acquisition of intimate knowledge of vernacular mosques in Melaka through the first-hand encounters with the sites. Sketches, measurements and drawings, field notes and slides are some of the instances that have been obtained through this strategy. On-site familiarity is also essential for arriving upon conjectures that, in the completed narrative, have the weight of informed opinion.

Strategy 2: The Use of Extant Documents

Considering the historical quality of dissertation's topic, it is an absolute essentiality to refer to many other studies and use them either to corroborate findings from the previous strategy or as a foil to site's observations. To support the ideas about Chinese influence on vernacular mosques in Melaka, extant documents can be used in a very focused way.

Strategy 3: Comparison with Conditions Elsewhere

Through this strategy, this research looks to similar condition in another Southeast Asia regions to speculate on Chinese architectural influence on Melaka vernacular mosques. This approach is based on the assumption that there is a definite

number of elements in Southeast Asian lands, which have been inspired from Chinese architecture.

Strategy 4: Use of Local Informant and Lore

Local informant, as well as local lore has proven useful, because of the limitations in data and material in libraries and websites. There is a common complaint among students, master's dissertation and doctoral thesis about the deficiency of historical evidence about vernacular mosques in Malaysia and in this case in Melaka, as a result it would be necessary to gain as much as possible from this strategy.

In this research, several attempt were made to contact to the mosques' managers. Unfortunately among the cases, only the managers of Kampung Hulu and Machap Lama mosques were able to speak to the researcher. For the other cases, ordinary people in the neighborhood were spoken to, who in some cases had difficulty to communicate in English. The evident collected through this strategy is mostly related to the history of mosques and the patrons.

CHAPTER 5

THE CASE STUDIES

5.1 Introduction

Melaka is undoubtedly the most renowned historical and cultural city in Peninsular Malaysia. UNESCO at the 7th July 2008 has declared this city, alongside the Georgetown in Penang as historic cities in Peninsular Malaysia and has listed them in the UNESCO World Heritage Site. Melaka's significant triumph and her honored place in Malay history were not only ascribed to its prosperity, but also to its ability to establish a pattern of a governmental system, as well as a lifestyle, which later became the base of what were entitled as traditional Malay culture and statecraft (Andaya, 2001). In addition, Melaka was the prime city that disseminated Islam into the Peninsular Malaysia under her powerful Muslim kingdom, which also established the unique Melaka mosque architectural style. The earlier vernacular mosques in Melaka were erected in timber and followed the Hindu-Buddhist, as well as the indigenous Malay architectural styles (Chen, 1998). After Portuguese occupation, due to extreme restrictions in practicing religions other than Christianity no mosque was built and already existed mosques were demolished (Moore, 2004). The earliest intact vernacular mosques in Melaka were built during the Dutch colonization, when the Chinese had lived in the city for generations. Also as mentioned earlier in Chapter 3, it was during the Dutch colonization that the Chinese craftsmen began to make their mark in Melaka's architecture (Purcell, 1951). As a result, the Melaka vernacular mosques demonstrate signs of Chinese architectural influences, as well as Western impacts. Due to the city's unique historical background, these mosques hold unique identity, which differs them from the vernacular mosques in the other Malay states.

This chapter presents descriptions about the six selected Melakan mosques in this study (Kampung Hulu mosque, Kampung Keling mosque, Tranguerah mosque, Peringgit mosque, Pengkalan Rama mosque, and Machap Lama mosque) in order to illustrate accurate and thorough pictures of each case study. The discussions presented in this chapter have been provided through careful site visits (by observations and measurements); however, there were several literary sources, which helped the author to enrich this section.

5.2 Case study 1: Kampung Hulu Mosque

Kampung Hulu mosque, one of the oldest mosques in Melaka, has been built primarily of masonry materials in 1728 (Dutch colonization) by a Chinese Muslim, the Dato Shamsudin bin Arom, and was one of the busiest Islamic centres during that time (Tajuddin, 2000).

The Roof: The most significant architectural element in Kampung Hulu mosque is the three-eave pyramidal roof, which is decorated with a celebrated carved crown at the top and pronounced concrete ridges with upward curved ends. The eaves' edges are simple, while clerestory windows between the second and the third eaves improving the ventilation process, as well as aesthetic values. The slopes of the three tires slightly differ from each other, and the semi-circular clay tiles are covering the surface.

There are four timber columns inside the prayer hall, which support the third tier of the roof. They are slender, simply carved in vertical lines and coloured partially in yellow at the bottom. Moreover, there are fourteen Doric columns around the verandah that support the first tier of the roof. These concrete columns, as well as the pedestals they stand on are ornamented partially in yellow colour.

The Façade: The principal prayer hall is square in the plan (Length/Width: 13.3m*13.3m), with three entrances in the eastern, one entrance and two flanking windows in the northern and the southern facades. The wooden frame windows in the facades (except for the west wall) are beautifully carved in floral motifs, and reminiscent of sophisticated Malay indigenous carvings. The two windows on the sides of the mihrab in the qibla wall are in the form of diamond. A band of sheen coloured ceramic tile is used as ornamental mean to decorate the exterior and interior white walls.

The Base: The main prayer hall stands on a concrete base of half a meter high and 19m*19m length and width. The verandah around the three sides of the prayer hall is accessible by a stairway in the middle of the northern, southern, and eastern sides of the base. Coloured sheen ceramic tiles cover these stairways. The iron balustrade around the verandah has been designed in floral motif, which is coloured in yellow glazed in some spots.

The Minaret: The octagonal pagoda-like minaret is positioned separately at the northern side of the main prayer hall and the spiral staircase within leads to the top. At the upper part, the minaret contains semi-circular arch openings at each side and a small-carved crown on the apex. Furthermore, there are small openings on the masonry walls of the minaret, which lead light to the narrow staircase.

The Minbar: The minbar in Kampung Hulu mosque is elaborately crafted with timber carvings in floral and some geometrical motifs. This minbar holds helmet-shape roof, curved ridges with elongated ends and carved eaves. The roof and the carvings are coloured in yellow, green, and red.

The Portal: Another notable element in Kampung Hulu is the two-storey portal that houses the traditional drum in the second level. Its curved pyramidal roof has a significantly carved crown and pronounced concrete ridges, which are carved in floral motif. The wooden balustrade around the second level accentuates the beauty of the portal. The supporting columns have gotten influence from Western twisted columns.

5.3 Case study 2: Kampung Keling Mosque

Kampung Keling Mosque is an elaborately decorated example of the vernacular Melaka mosques (Chen, 1998). This mosque was built on the foundation of its original timber structure in 1748, which was renovated in 1872 (Tajuddin, 2000).

The Roof: A carved pinnacle crowns the remarkable three-tiered pyramidal roof, while the sloping ridges are raised and carved in floral motifs, with upward and outward curved ends (the slopes of the roof tiers are slightly different from each other). The coloured pane clerestory windows between the second and the third tiers, with carved wooden panels in the four corners intensify the beauty and improve the ventilation procedure. Unfortunately the wooden carvings on the ventilation panels of the qibla wall are into decline; yet signify the advanced Malay carving skills. The fascia under the second and the third eaves are carved in floral motifs and are coloured. Moreover, the four timber columns inside the prayer hall (from the original mosque structure) support the third tier of the roof, while their surfaces are carved simply in vertical lines and modest floral motif at the lower part, while sitting on marble square pedestals.

The Façade: The main prayer hall is almost square in the plan (Length/Width: 16m*13.6m), with three entrances in each of the northern, the southern, and the eastern

facades, which alongside the carved lattices give rhythm to the elevations. Bands of coloured sheen ceramic tiles on the lowest part of the interior and exterior walls give a rich look to the main prayer hall. The outer concrete columns with Ionic Roman capital sit on square pedestals and are covered with coloured ceramic tiles. There are also six columns with Ionic Roman capital in front of qibla wall to form five arches, all decorated partially in yellow glazed colour. The wooden doors and windows are highly ornamented with woodcarvings, which are partially coloured in yellow glazed.

The Base: The principal prayer hall stands on a base (Length/Width: 20m*16m), which holds a stairway, ornamented with ceramic tiles in each of the northern, eastern, and the southern sides. There is a verandah around the three mentioned sides of the prayer hall, with the iron balustrade, ornamented with floral motif and coloured partially in yellow glazed colour.

The Minaret: The elaborately decorated pagoda-like minaret with the extreme corner edge is located separately at the northern side of the main prayer hall. It contains six ascending four-sided stories, while each storey bearing semi-circular arch openings. A pyramidal roof with highly pronounced ridges with curved ends and carved crown intensify the minaret significance.

The Minbar: In contrast to other features in the mosques, which are modest, the minbar is elaborately decorated with red and yellow timber carvings in floral and some geometrical motifs. This minbar holds helmet-shape roof, curved ridges with elongated ends and carved eaves.

The Portal: The intricate gateway to the Kampung Keling mosque is notable for its complex woodcarving and ornamented timber trusses that support the gable

roof. The copings of the gable roof are raised and carved in floral motifs. Above this gable roof, there are a semicircular European pediment and three silver pinnacles.

5.4 Case study 3: Tranguerah Mosque

The original mosque of Tranguerah was built in 1728 (during the Dutch colonization) of timber. In renovation of 1890, the wooden walls and floors were replaced with concrete, but the original roof structure, as well as the wooden supporting columns and beams have been maintained (Nasir, 2004). The minaret and the main gateway were added in 1910 (Nasir, 2004).

The Roof: The three-tiered pyramidal roof is the most elaborated roof among the case studies. The pitch of each tier increases toward the significant carved crown, which bears various carvings in floral and natural motifs. The raised ridges are split into two branches near the lower part, while one of the branches is shorter than the other and both are adorned with carvings and projected corners. The coloured sheen ceramic tiles cover the intervals of the roof's eaves; however, most of these tiles are destroyed. Moreover, the fascias under the eaves are carved in floral motif and are coloured.

The outer elaborately carved Corinthian columns support the first tier of the roof and are coloured in silver and yellow glazed, while sitting on square pedestals, which are covered with coloured ceramic tiles. The four wooden columns inside the prayer hall support the third tier of the roof and are simply carved in vertical lines and modest floral motif at the lower part, which are coloured partially in yellow glazed, while sitting on square pedestals of marble.

The Façade: The main prayer hall is almost square in the plan (Length/Width: 14.6m*12m). In the eastern and the southern sides of the base, there is a stairway that leads to the covered verandah. Each one of the northern and the southern facades possesses three wide arched entrances and a carved lattice, while the eastern facade demonstrating three wide arched entrances. The semi-circular arches above the doorways bear significant ironwork decorations in floral motif, which are coloured in silver and yellow glazed colour, whilst the coloured sheen ceramic band at the surface of the inner and outer walls is the only ornamental elements on the facades. There are also four columns with same design of verandah's pillars in front of qibla wall.

The Base: The main prayer hall stands on a square modest base (18.5m*18.5m), which holds stairways on the eastern and southern sides. The sheen ceramic tiles cover these stairways. There is a verandah around the eastern, northern, and southern sides of the prayer hall, with the iron balustrade, ornamented with geometrical motif and coloured in yellow.

The Minaret: The pagoda-like octagonal minaret with the extreme corner edge is located separately in front of the stairway of the east facade. It has six storeys sitting on an octagonal base with eight circular pillars, which support its roof. The upper most storey contains wide semi-circular arch openings in each side and is crowned by a roof with carved pinnacle and raised ridges with elongated ends.

The Minbar: The minbar in Kampung Hulu mosque is elaborately crafted with timber carvings in floral and some geometrical motifs. This minbar holds helmet-shape roof, curved ridges with elongated ends and carved eaves. The roof and the carvings are coloured in yellow and red.

The Portal: The intricate portal of the Tranguerah mosque is notable with a European broken pediment and two flanking curved pediment at the top of a gable roof. Each pediment holds an elaborated golden pinnacle on the apex. The gable roof above the entrance with its highly decorated ridges rests on two slender yellow glazed pillars that sit on the pedestals covered by coloured ceramic tiles. Furthermore, two Corinthian Roman pillars flanking the entrance sit on pedestals that are covered by coloured ceramic tiles.

5.5 Case study 4: Peringgit Mosque

The original Peringgit Mosque was built in 1726 during Dutch colonization of timber and it had been demolished and rebuild of brick and renovated several times in 1826 and 1954; however, the roof structure and the main pillars were retained and the mosque still preserves the fundamental characters of original Peringgit mosque.

The Roof: Peringgit Mosque possesses an amazing three-tiered pyramidal roof, with extremely elaborated carved crown and pronounced ridges. The coloured-pane clerestory windows between the second and the third eaves intensify the beauty and improve the ventilation process. The pitch of each tier differs from the other, yet all the three tiers have the same ornamental ridges and fascia with simple carvings.

The four timber columns inside the prayer hall support the third tier of the roof, whilst are simply carved in vertical lines and modest floral motif at the lower part. Moreover, there are two circular pillars in front of qibla wall and thirteen concrete columns around the verandah support the first tier of the roof.

The Façade: The main prayer hall is virtually square in the plan (Length/Width: 11.5m*10m), with one doorway and two flanking windows in each of

the northern, the eastern, and the southern facades (the doors and windows are beautifully carved in floral and geometrical motifs).

The Base: The main prayer-hall stands on a base, which is almost square in the plan (Length/Width: 15.8m*14.4m). There is a verandah around the three sides of the prayer hall, accessible by a stairway centered in the northern, the eastern, and the southern sides of the base. The wooden balustrade around the verandah is ornamented with simple carvings in geometrical and floral motifs.

The Minaret: Although it is reputed that this mosque once had a minaret but there is no proof for this notion.

The Minbar: This mosque does not hold a minbar.

The Portal: The recently added iron gateway is quite simple and possesses floral motif decorations, which are coloured in red and yellow glazed.

5.6 Case study 5: Pengkalan Rama Mosque

Pengkalan Rama mosque was built in the 1730s and has been renovated several times in 1917 and 1987 (IslamGRID, 2009).

The Roof: A significant three-eave pyramidal roof covers the main prayer hall. The pyramidal roof represents an elaborate carved crown (partially coloured in yellow glazed) and pronounced ridges (carved in floral motifs), with elongated and curved ends. The clerestory windows between the second and the third tiers intensify the beauty and improve the ventilation process. There are four timber columns inside the older prayer hall, which bear the weight of the upper tier, carved in simple vertical lines and sit on pedestals with ceramic tiles coating.

The Façade: The current complex consists of two separate prayer hall. The older prayer hall is almost square in the plan (Length/With: 10.5m*8.5m), which is attached to the new prayer hall from its northern wall, while the eastern and the southern facades presenting, respectively, three and four wooden entrances. The coloured sheen ceramic band and Roman carvings are the only decorative elements on the surfaces of the exterior walls.

The Base: This sample holds a very low level base, which is covered by ceramic tiles.

The Minaret: The minaret in this mosque is a recent addition, square in the plan and has no impressive feature except for its roof ridges, which are carved in floral motifs and hold curved extended ends. The minaret consists of five storeys, which each storey possesses semi-circular arched windows on each side with coloured panes.

The Minbar: In comparison to the other mentioned mosques, the wooden carved minbar is quite simple; its carvings in floral motifs are partially coloured in yellow glazed.

The Portal: The extremely simple iron gateway in this sample is a recent addition.

5.7 Case study 6: Machap Lama Mosque

Although this sample does not include in the first criterion of sampling procedure, the strong Chinese ideas in its design make this mosque an especial sample for this study in order to enrich the findings. Among all visited vernacular mosques in Melaka, Machap Lama is the only one that holds Chinese inscription on an engraved stone, as well as colour paintings on the walls. These facts verified the idea that this

mosque could strengthen the discussion on Chinese architectural influences on Melaka mosques design. As a result, at the last criterion Machap Lama was added to the five samples, which had been selected based on the previous sampling criteria.

Machap Lama mosque is located in the city of Alor Gajah (sub-district of Machap), which is placed 25km north of Melaka. This mosque, hidden and secluded, demonstrates one of the most amazing examples of vernacular Melaka mosques.

The Roof: A tow-eave pyramidal roof covers the main prayer hall, whilst clay ceramic tiles covering the roof. A row of coloured-pane clerestory windows between the eaves augments the aesthetic values, while assisting in the building's ventilation procedure. The two tiers of the roof slope in different pitches; however, the upper tier presents a break on the lower part to form a pitch similar to the lower tier's slope. The ridges are raised and simple with no ornaments, yet the ridges' ends are curved outward and upward in the floral motif. The fascia under the roofs eaves are coloured and carved in floral motif. On the apex of the pyramidal roof, there is a golden-glazed crown in the shape of a dome (probably a recent addition). There are six inner timber columns hold the upper eave of the two- eave pyramidal roof, while ten outer concrete columns holding the lower eave.

The Façade: This mosque holds an almost square floor plan (Length/Width: 9.5m*7.8). The northern, eastern, and southern facades hold one door and two flanking windows, while coloured-paintings decorating the facades' surfaces (especially the east facade represents amazing coloured-paintings in plant themes). The qibla wall presents the mihrab with a semi-circular arch and two flanking windows with latticework in the form of diamond.

The Base: The prayer hall stands on a square base (12m*12m), which holds a staircase in the middle of eastern, northern, and southern sides. The stairways are covered with ceramic tiles and lead to the covered verandah. There is an iron balustrade in floral motif around the verandah.

The Minaret: Machap Lama mosque holds a taboo as the device to call to pray instead of a minaret.

The Portal: The extremely simple iron gateway in this sample is a recent addition.

The six case studies in this study are illustrated in the Table 5.1, while their location is presented in Figure 5.1. Table 5.2 and 5.3 illustrate the case studies floor plan and elevation respectively.

Table 5.1: The Case Studies (Author)

Case study 1: Kampung Hulu Mosque	Case study 2: Kampung Keling Mosque	Case study 3: Tranguerah Mosque
		
Case study 4: **Peringgit Mosque**	**Case study 5:** **Pengkalan Rama Mosque**	**Case study 6:** **Machap Lama Mosque**
		

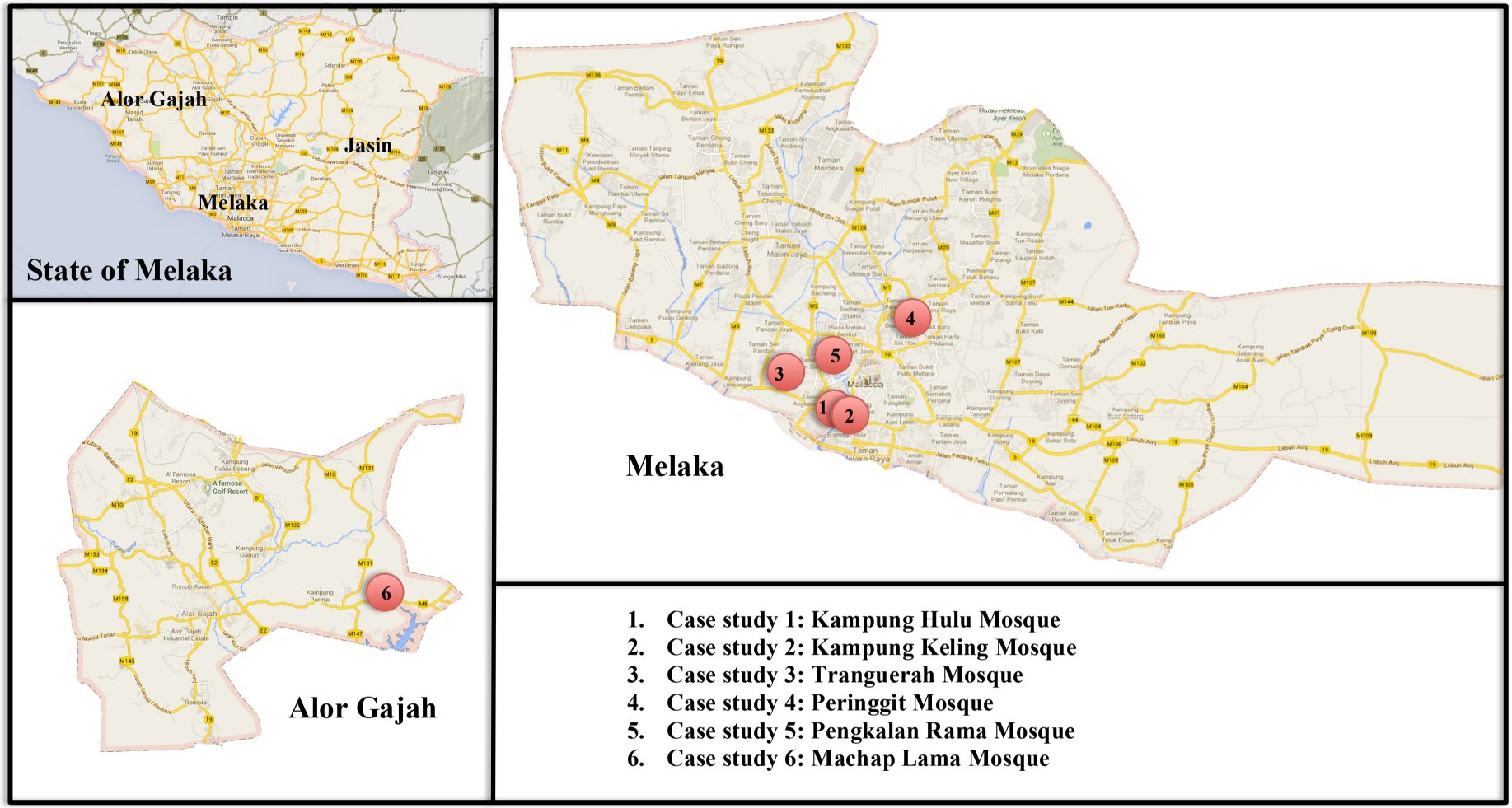
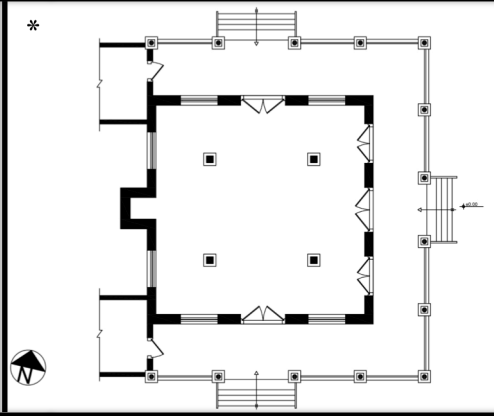
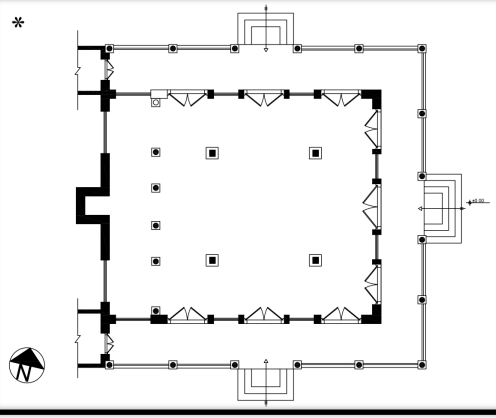
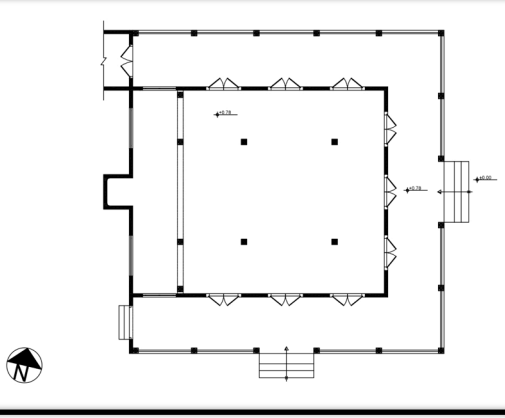
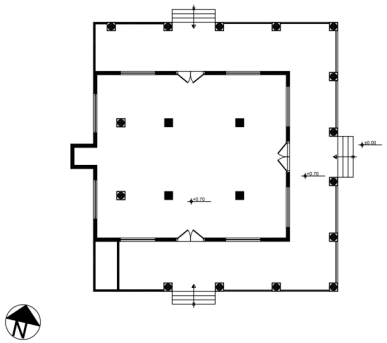
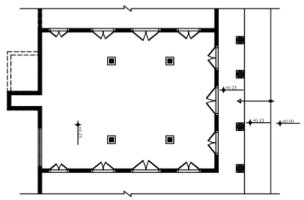
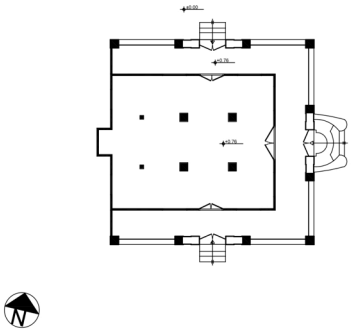


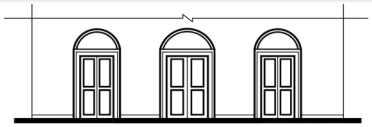
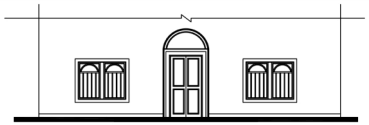
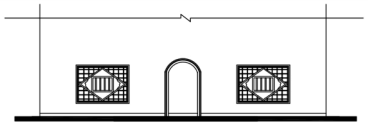
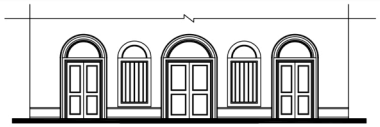
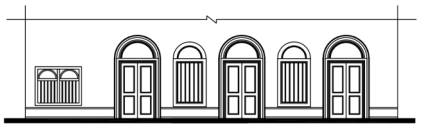
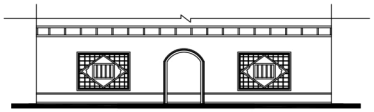
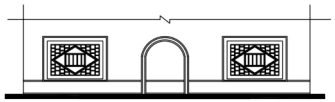
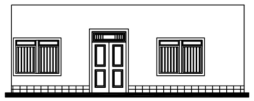
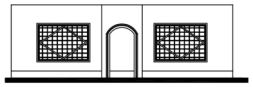
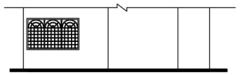
Figure 5.1: The location of case studies
Source: Google Maps

Table 5.2: The Plans (Author)

Sample	Case study 1: Kampung Hulu Mosque	Case study 2: Kampung Keling Mosque	Case study 3: Tranguerah Mosque
Floor Plan	* 	* 	
Sample	**Case study 4: Peringgit Mosque**	**Case study 5: Pengkalan Rama Mosque**	**Case study 6: Machap Lama Mosque**
Floor Plan			

* Drawn by Author Source from *"The Architectural Heritage of the Malay World: The Traditional Mosque"*, Tajjudin

Table 5.3: The Facades (Author)

Item / Sample	E L E V A T I O N		
	East View	South View	Mihrab Wall
Case study 1: Kampung Hulu			
Case study 2: Kampung Keling			
Case study 3: Tranguerah			
Case study 4: Peringgit			
Case study 5: Pengkalan Rama			
Case study 6: Machap Lama			

CHAPTER 6

FINDING AND ANALYSIS

6.1 Introduction

During the time when most of the vernacular mosques in Melaka were erected, Chinese tradition and art have already taken roots in the port. Although the richness of indigenous Malay heritage did not permit Chinese architecture to dominate Malay architectural characteristics, the tight interconnection and prolonged contacts between two realms and races made Chinese architectural language woven in Malay architecture's soul. Melaka as the primary centre for Chinese's settlements in the Peninsula significantly portrays this reflection of Chinese architecture in the local architectural scene. Besides the Chinese buildings throughout the city, which follow the exact architectural traditions from their homeland China (mainly Southern China), other constructed buildings around the city also reflect signs of Chinese architectural elements and influences that enrich Melaka's scenery. Vernacular mosques in the city are no exception and they show an overall impression of Chinese presence.

This chapter presents descriptions on findings from primary and secondary data and provides comparisons between Classical Chinese Architecture and vernacular mosques in Melaka to show Chinese influence on early Melakan Islamic architecture. At first, a brief explanation on analysis and evaluation process is explained and later to answer the research's question descriptions and comparisons are presented.

6.2 Evaluation and Analysis Finding

As said earlier in Chaptet Four, to provide an analytical organization for accurate comparison, each case study is considered as a title under the primary dara, in which three different sub-titles are included. Roof, Façade, and base are seen in all of

the buildings that this research has studied. Same manner is applied for secondary dara, in which titles hold evidece about Classical Chinese buildings in Mainland China and the Peninsula. Each one of the sub-titles in primary data is compared to its counterpart in secondary data. The comparative analysis focuses on ornamentation, material, form, and proportion. Other architectural elements in the mosques such as the minaret, portal, and minbar are analysed separately based on their form and ornamentation.

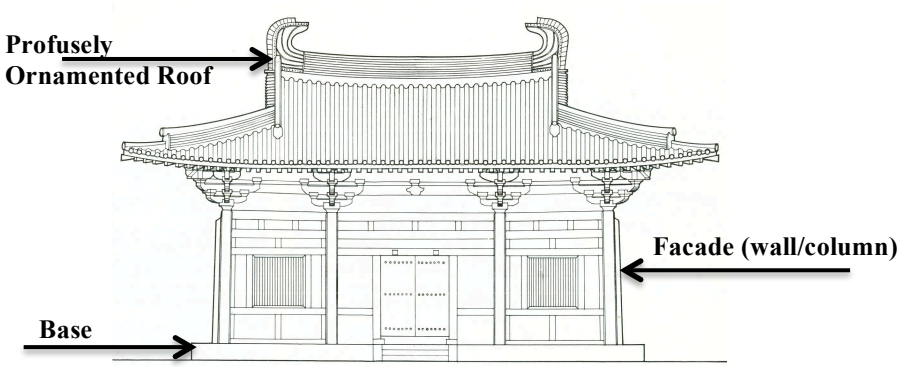


Figure 6.1: Three Primary Architectural Features In Classical Chinese Architecture
Source: Liu, 1989

6.2.1 The Roof

Following the Southeast Asian vernacular mosque's design, Melakan vernacular mosques' roofs have been formed inspired by Hindu-Buddhist architectural style. Multi-tiered pyramidal roof, known as meru roof, is one of the most prominent architectural elements in Southeast Asian traditional mosques, which has been applied in early Hindu or Buddhist temples erected in the region (Refer to Chapter Two). However, vernacular mosques' roofs in Melaka bear additional elements and characteristics in terms of ornamentation and material, which show no trace of Hindu-Buddhist (or indigenous Malay) architecture and leave the inspiration from Hindu-Buddhist architectural language only in morphologic concepts. Comparison between

Chinese practices and Vernacular Melaka mosques reveal fascinating analogies in decorative features and certain applied materials in roof's design and construction. Figure 6.2 presents the overall view of the case studies' roofs.

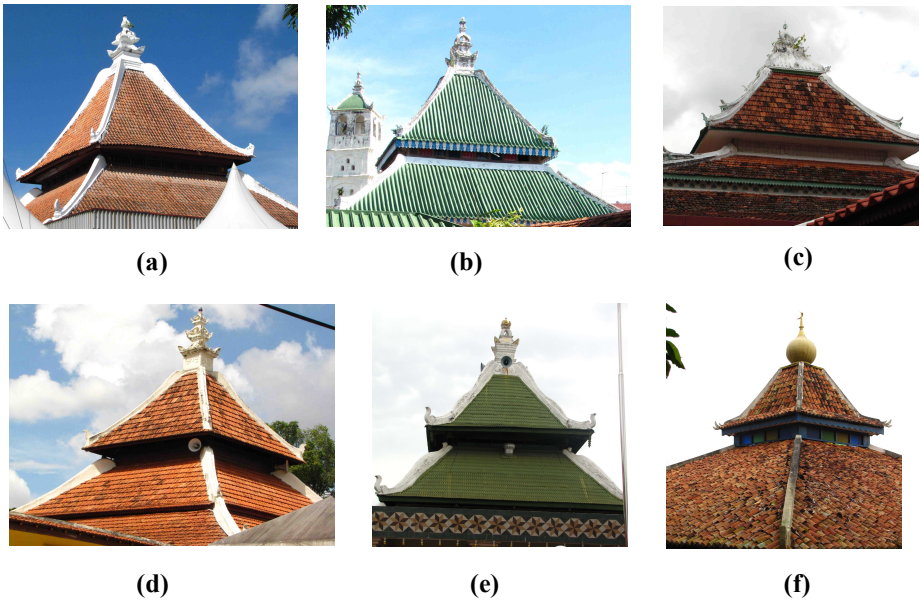
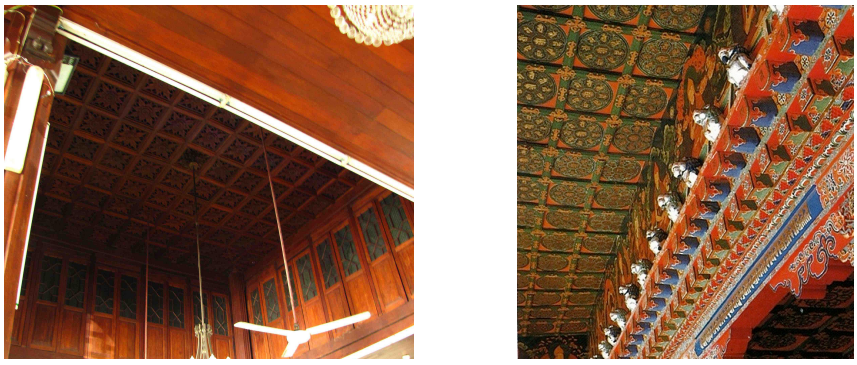


Figure 6.2: The Roofs In Case studies- a) Kampung Hulu Mosque b) Kampung Keling Mosque c) Tranguerah Mosque d) Peringgit Mosque e) Pengkalan Rama Mosque f) Macap Lama Mosque
Source: Field Work

As mentioned earlier in Chapter Three, the interior structure of the roof in important buildings in Classical Chinese Architecture is covered by coffered ceiling, which is magnificently coloured or glittered with various figures and patterns (Juliano, 1981). The interior structure of Kampung Hulu mosque's roof demonstrates the fascinating influence of this Classical Chinese architectural characteristic. However, the coffered ceiling in Kampung hulu mosque represents a simplified version of Chinese coffered ceilings with carvings of floral motif and no colour-paintings. Figure 6.3 presents a comparison between coffered ceiling of Kampung Hulu mosque and a Confucian Temple in China.



(a) (b)

Figure 6.3: The Coffered Ceiling- a) Kampung Hulu Mosque
Source: Field Work
b) Dazao Temple, Lhasa
Source: Zhong et al., 1986

Another Interesting element, which has been formed under the strong influence of Classical Chinese Architecture, is the mihrab's roof in Tranguerah mosque. This roof demonstrates potent analogies with curved pyramidal roof of Chinese pavilions (refer to Figure 6.4), which holds a crown, curved pronounced ridges with projected corners. Figure 6.5 illustrates the mihrab's roof in Tranguerah mosque.

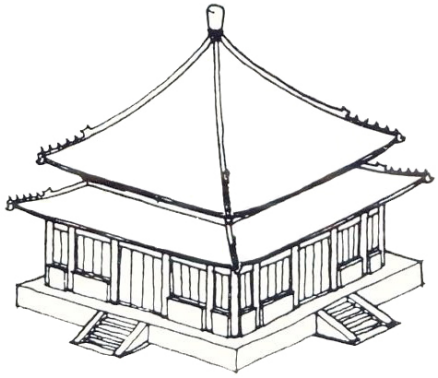


Figure 6.4: Chinese Pyramidal Roof on a Pavilion
Source: Liu, 1989

Figure 6.5: Mihrab's Roof in Tranguerah Mosque
Source: Field Work

As stated before, this study tries to evaluate and interpret the roofs of case studies from two aspects of ornamentation and material. Related descriptions, comparisons, and interpretations have been provided in the following section.

6.2.1.1 Ornamentation

Interestingly, through analysis and evaluation process of National Chinese architecture, Southern Chinese architecture, Chinese architecture in the Peninsula, and selected Melakan mosques it can be noticed that decorative elements in Vernacular Melaka mosque's roof design generally have been created under powerful influence of Classical Chinese buildings in Northern China rather than Southern Chinese architecture. As said before, Chinese temples in the Peninsula, following Southern Chinese architecture demonstrates flamboyant, three-section gable roof with profusely ornamented inward curved ridges and raised copings, and elongated outward curved eave corners. While Northern Chinese temples generally show huge hipped roof or hipped-gable roof with amazing decorative features such as crowns, pronounced ridges, symbolic sculptures on ridges, and projected eave corner (these eave corners also had functional purposes contrary to Chinese buildings in the Peninsula, where projected eave corners are mainly decorative features).

As mentioned before in Chapter Three, one of the most prevailing ornamental methods in Classical Chinese Architecture is the use of magnificent colour-paintings or clerestory windows on the intervals between the tiers of the roof (Zhong et al., 1986). Kampung Hulu mosque represents clerestory windows on the interval of the second and the third tires of the roof, which in the corner bear simple wooden carvings, and golden glazed ornamental element in floral motif. Kampung Keling mosque holds clerestory windows with coloured windowpanes between the third and second tiers of the roof with floral wooden carvings in the corners, and demonstrates amazing carvings in floral motifs between the first and the second tiers. Tranguerah mosque shows coloured ceramic tiles between the roof tiers; however, unfortunately, these decorative elements are neglected and have been fallen into decay. Pengkalan Rama mosque holds simple clerestory windows between the third and the second tiers roof, while Perringit mosque presenting wooden frame openings with simple carvings on the interval of the third and the second tiers. Macap Lama mosque's roof is a two-tiered pyramidal, which shows a simple clerestory windows with coloured windowpanes between the two tiers. Figure 6.6 illustrates coloured-paintings at the intervals of Chinese hipped roof, while Table 6.1 is representing mentioned decorative elements at the intervals of the tiers in selected mosques' roofs.

Ornamental elements and motifs in the case studies in this study bear a definition or medium of communication related directly to Melakan peoples lives, as well as surrounding environment (Utaberta et al., 2012), whilst the ornamental elements and motifs in Classical Chinese Architecture are bearing more symbolic meanings, referring to emperors, holy personages or animals (Liu, 1989). Due to strong influence of Hindu-Buddhism, human figure, spiritual and animal forms were used in architectural practices prior to the advent of Islam. With the advent of Islam

these forbidden motifs were not completely disappeared but went through a physical modification, while maintaining its meaning (Utaberta et al., 2012).

In order to enrich the discussion the ornamental elements of the crown, the ridge, and the eave in the selected Melakan mosques are analysed and compared with equivalent evidence from Classical Chinese Architecture.

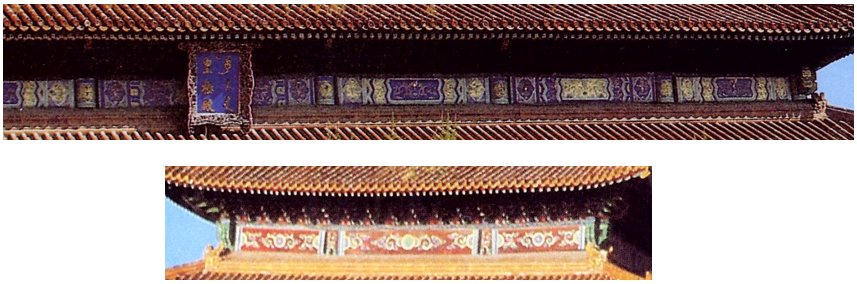
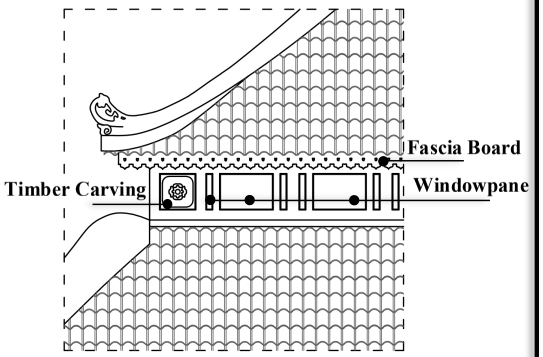
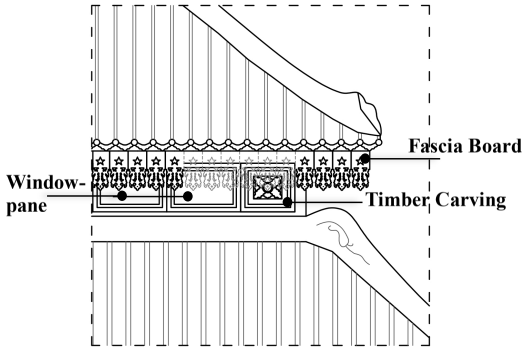
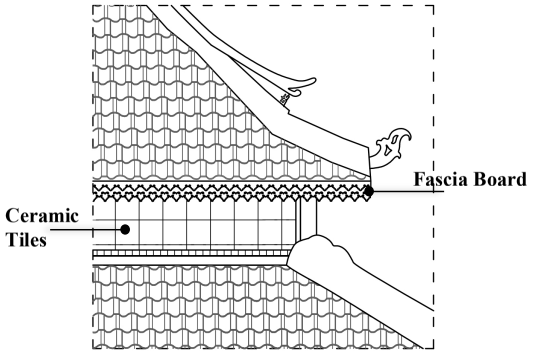
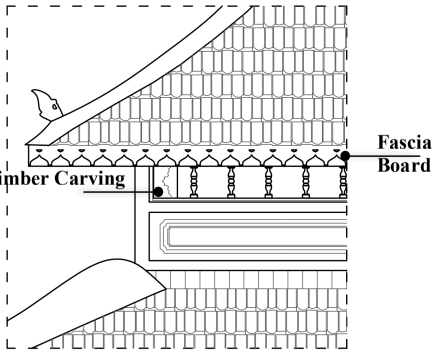
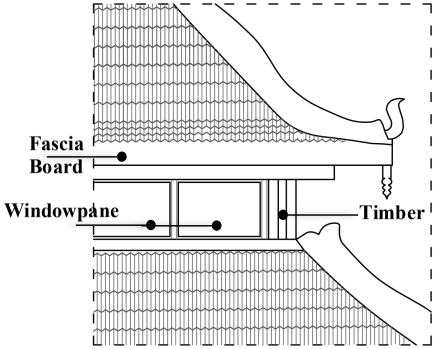
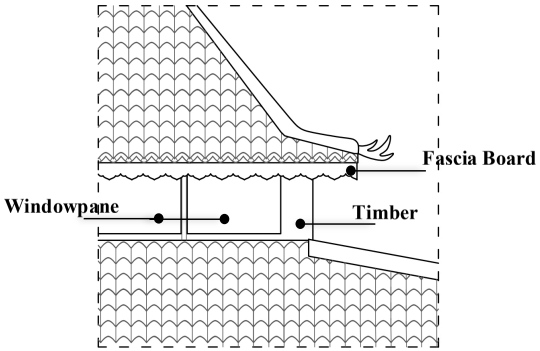


Figure 6.6: Coloured-paintings Between the Roof's Tiers, Forbidden City
Source: Ru and Peng, 1998

Table 6.1: The Clerestory Windows or Coloured Ceramic tiles Between Roof's Tiers in Case Studies (Author)

Case study 1: Kampung Hulu Mosque	Case study 2: Kampung Keling Mosque	Case study 3: Tranguerah Mosque
		
Case study 4: Peringgit Mosque	**Case study 5: Pengkalan Rama Mosque**	**Case study 6: Machap Lama Mosque**
		

The Crown

All case studies in this study demonstrate remarkable carved concrete pinnacles or crowns on top of the roof. It is true that the majority of Chinese temples in the Peninsula resemble Southern Chinese architecture and do not present crown but interestingly Vernacular Melaka mosques show an influence from Northern Chinese temples by introducing a celebrated crown at the apex of each mosque. As said earlier, in Chinese temples in the Peninsula usually the main hall, entrances, and additional structures are covered with a three-section gable roof, which is adorned by raised main ridge and dividing copings, and projected gable ends. However, there are still Chinese temples in the Peninsula that follow Northern Chinese architecture (probably are of the later practices) and demonstrate a crown (for instance, Chin Swee temple in Pahang). Classical Chinese temples in Northern China, demonstrate prevalent appearance of crowns on top of the middle of the main ridge. Although the roof's form in Northern Chinese temples is completely different from the Vernacular Melaka mosque, the importance of the use of pinnacle in both architectural styles is obvious. It should be mentioned that the employment of the crown on the apex of the Hindu-Buddhist structures in India is also prevailing, thus there is a possibility that the appearance of this ornamental element is from Hindu-Buddhist influence; however, many of scholars such as Chen (1998) and Utaberta, (2012) believe that the crown in Melaka mosque architectural style is a Chinese influence.

In Northern Chinese architecture, the crown majestically sits on a pronounced main ridge of the hipped or gable-hipped roof of a temple, or simply caps the end of curved ridges of the pyramidal roof in a pavilion. In Vernacular Melaka mosque, the crown is placed on the upper end of the curved and sometimes beautifully carved ridges of the tiered pyramidal roof. Figure 6.7 shows examples of crowns' forms found in Chinese buildings in China and in the Peninsula. It should be mentioned that crowns

in Northern Chinese architecture are considerably larger in size than the crowns, found in Chinese temples in the Peninsula. In addition it should be emphasized that Northern Chinese architecture probably is the initial source of inspiration for the crowns found in Chinese buildings worldwide.

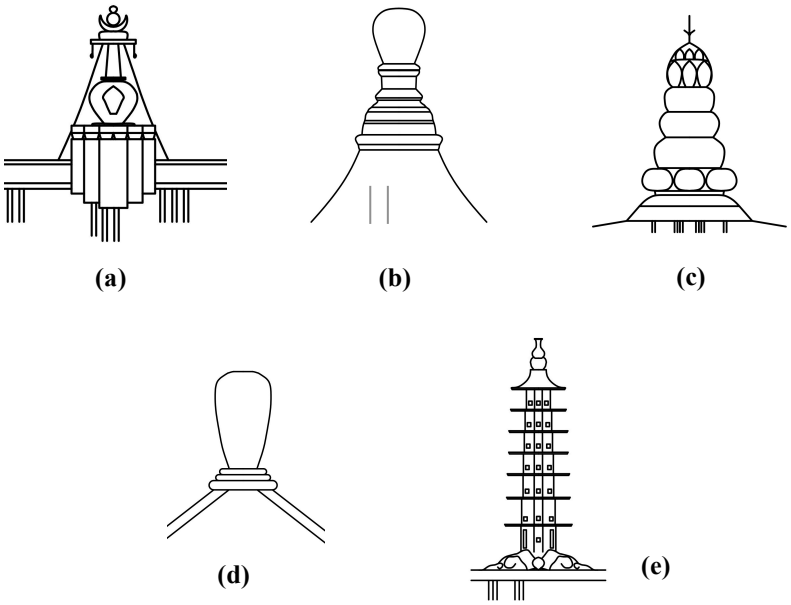
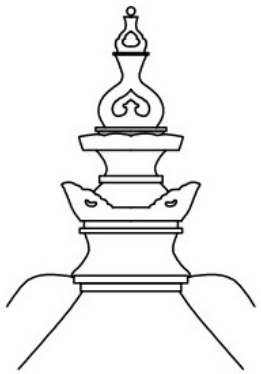
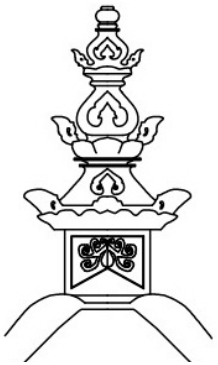
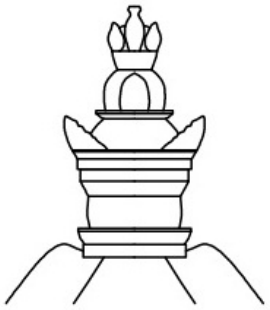
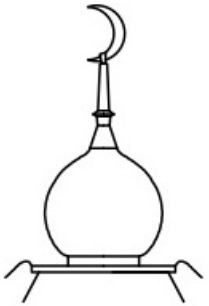


Figure 6.7: Chinese Crowns- a) Temple of Heaven, Beijing b) Puning Temple, Hebei c) Nanjing Mosque, Nanjing d) Chin Swee Temple, Pahang e) Chin Swee Temple, Pahang
Source: Drawn by author source from Chinese Academy of Architecture, 1982; Liu, 1989; Author, 2013

Although the main concept of the crown application on top of the roof in the case studies comes from Northern Chinese architecture, the form and carvings on these crowns are completely different from what can be seen in Chinese practices. Crowns in Vernacular Melaka mosques belonged to the Flora Type in traditional Islamic crown typology (other typologies are Rounded Type, Rod Type, and Cross Type) (Utaberta, 2012), and are mainly reminiscent of Buddhist lotus. Although it has been suggested that Flora Type crown has its root from the Mainland China (Utaberta, 2012), it is more acceptable that this kind of form and carvings is an inspiration from Hindu-Buddhist decorative motifs or symbolic elements. The crown of Macap Lama mosque,

exceptionally, has been designed inspired from Islamic dome. Table 6.2 shows the crowns in the case studies. The differences in the form and design between Chinese and Melakan crowns illustrated in figure 6.7 and table 6.2 are completely distinguishable.

Table 6.2: The Crown in Case studies (Author)

Case study 1: Kampung Hulu Mosque	Case study 2: Kampung Keling Mosque	Case study 3: Tranguerah Mosque
		
Case study 4: **Peringgit Mosque**	**Case study 5:** **Pengkalan Rama Mosque**	**Case study 6:** **Machap Lama Mosque**
		

In this matter, the crown of Kampung Keling mosque shows more influence of Classical Chinese Architecture in term of decorative carving motif. As mentioned earlier in chapter 3, Classical Chinese ornamentation demonstrates a variety of sculptures and carving motifs, which has been inspired from Chinese culture and symbolism. One of the most common carving motifs, especially in imperial Chinese buildings, is the Cloud. Interestingly, Kampung Keling mosques crown bears Cloud motif carvings. Figure 6.8 provides a comparison between carvings on Kampung Keling mosque's crown and stone carvings in the imperial palace of Forbidden City in Beijing. The similarity in the application of the Cloud motif is easily distinguishable.

(a) **(b)**

Figure 6. 8: The Carvings
a) The crown of Kampung Keling Mosque –Cloud Motif Carvings
Source: Field Work
b) The Cloud Motif on Stone Carvings, Forbidden City
Source: Zhong et al., 1989

The Ridge and Elongated Ends

Another decorative feature in Vernacular Melaka mosques' roof design, which has gotten influence from Chinese architecture, is the pronounced ridge. Both Northern Chinese and Southern Chinese architecture provide numerous examples of ornamented roof ridges but with different decorative motifs and techniques. Northern Chinese buildings show ridges with sculptures of imperial or holy animals such as dragon, phoenix, and zodiac animals, while Southern Chinese buildings showing more exaggerated ridges with colourful floral motifs, and holy personages in cut and paste

technique. Figure 6.9 provides a comparison between ridge design in Northern China and Peninsular Malaysia.

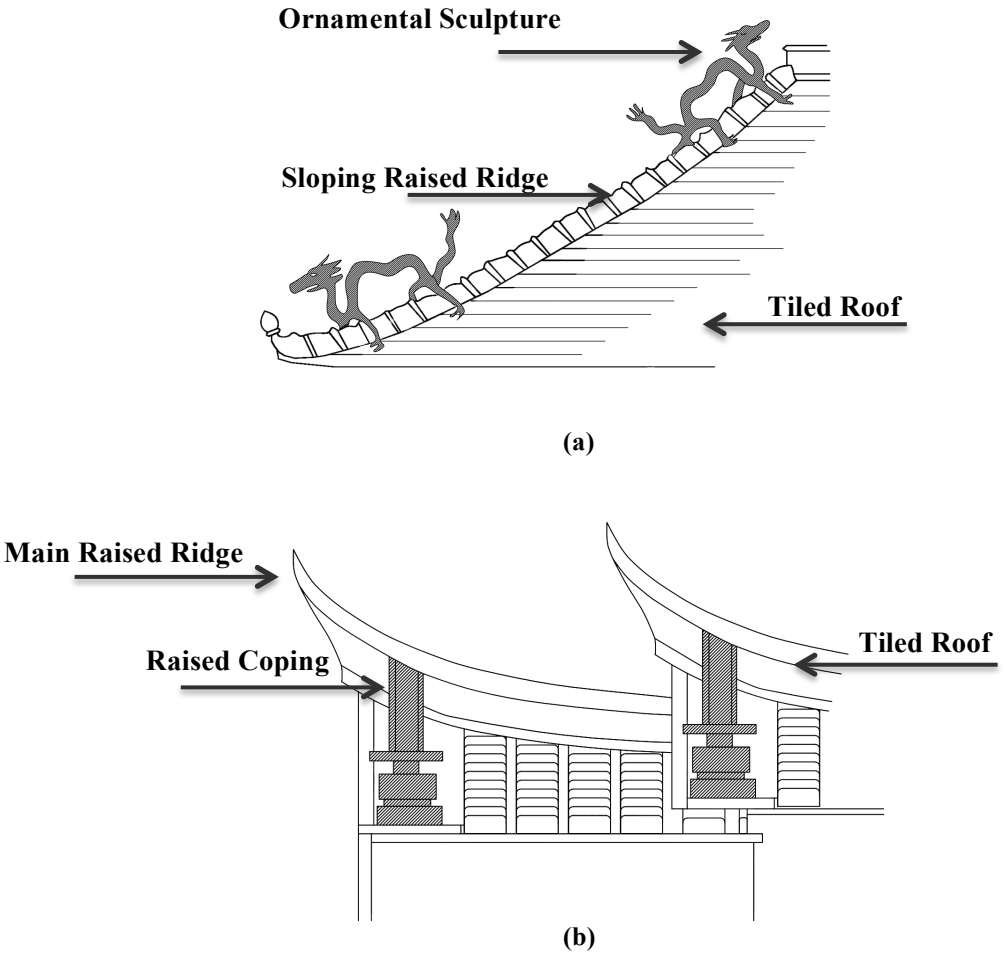


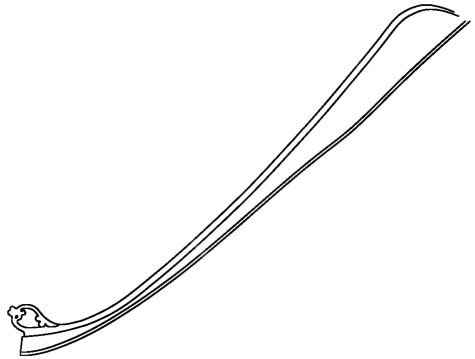
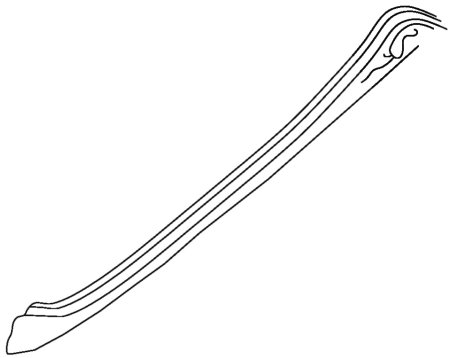
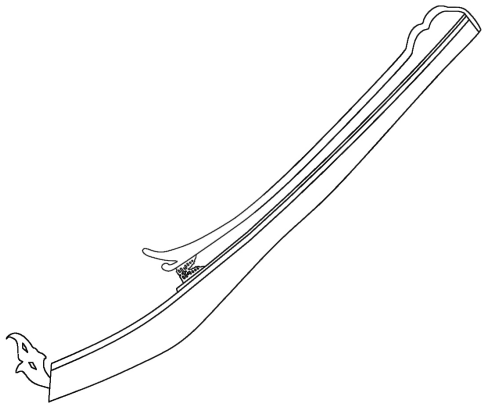
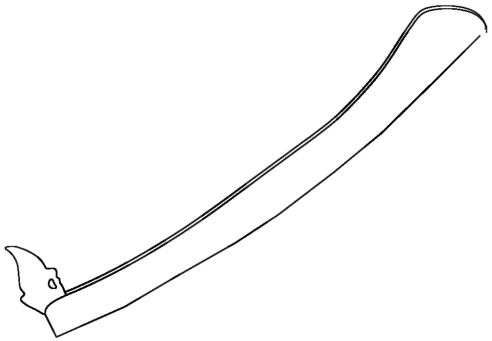
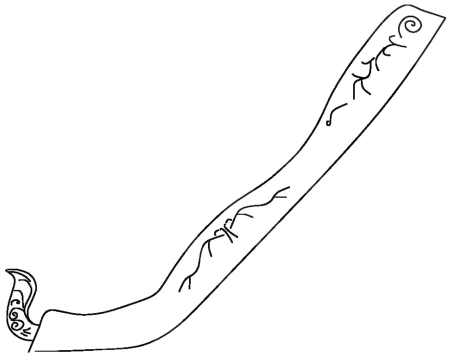
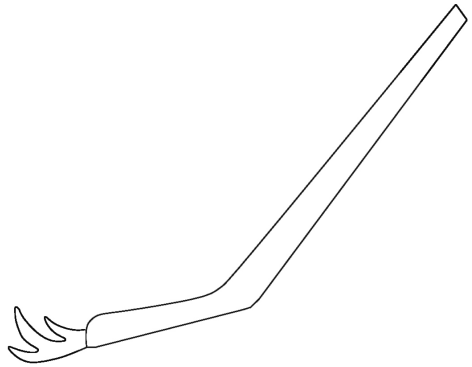
Figure 6. 9: The Ornamented Ridge
a) Xugmifoshou Temple, Chengde, Hebei Province
Source: Drawn by Author source from *Wei,* 2000
b) Chen Hoon Teng Temple, Melaka
Source: Author

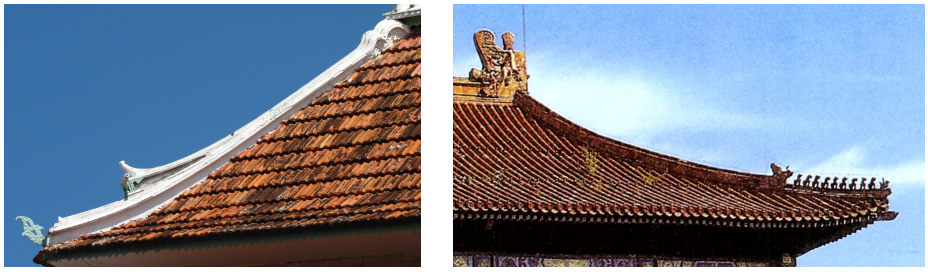
In Classical Chinese Architecture the curve of the ridge is created by depressing the place of the purlins below the ridge (Liang, 1984), while in vernacular Melaka mosques, the curve of the ridge is formed through ornamental means. Vernacular Melaka mosques represent curve ridges similar to the ridges in the Northern Chinese practices after the Qing Dynasty (refer to table 3.1, Chapter 3). However, since in Islamic culture the application of animal and personage motifs are

forbidden, the concrete pronounced ridges in selected mosques are simple or demonstrate carvings in floral motifs instead of the application of sculptures or other Chinese motifs. It has been suggested that the roof's ridge in vernacular mosques takes the image of the dragon (Mohamed, 1985); however, none of the studied documents about ridge roof in vernacular Melaka mosques verify this idea (placing sculptures of dragons on the Chinese roof's ridges is prevalent, since dragons have a special place in Chinese symbolism as represent emperors (Stalberg and Nesi, 1983). Table 6.3 illustrates ridge design in selected mosques.

The ridges of Tranguerah mosque's roof have been formed interestingly very similar to one of the ridge's designs in Classical Chinese Architecture, especially the ridges' form of the royal buildings. The ridges of all three tiers in Tranguerah mosque's roof have been split into two branches near the lower part, while one of the branches is shorter than the other and both are adorned with projected corners and carvings. These carvings are a combination of floral motifs and Chinese patterns. In addition to the form, the application of sculptures on the ridge, which is a decorative style in both Northern and Southern Chinese architecture, is discernible in the ridges of the second tier of this mosque's roof. However, these applied ornamental elements, following the Islamic teachings, do not represent animals or personages' figures and are very similar to pinnacles that can be seen in Buddhist pagodas in China. Figure 6.10 provides a comparison between ridges of Tranguerah mosque and an imperial hall in the Forbidden City. Figure 6.11 presents a comparison between ornamental elements on Tranguerah mosque's ridge and the crown of a Chinese pagoda.

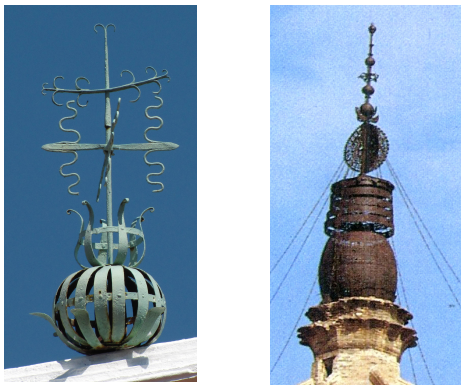
Table 6.3: The Raised Ridge in Case studies (Author)

Case study 1: Kampung Hulu Mosque	Case study 2: Kampung Keling Mosque	Case study 3: Tranguerah Mosque
		
Case study 4: **Peringgit Mosque**	**Case study 5:** **Pengkalan Rama Mosque**	**Case study 6:** **Machap Lama Mosque**
		



(a) (b)

Figure 6.10: Ridge Design- a) Tranguerah Mosque
Source: Field Work
b) Imperial Palace, Forbidden City, Beijing
Source: Ru and Peng, 1998



(a) (b)

Figure 6.11: a) Ornamental Element on Ridge- Tranguerah Mosque
Source: Field Work
b) Fogong Pagoda Crown, Shanxi, Liao Dynasti, 11th
Source: Liu, 1989

Figure 6.12: The Application of Chinese patterns in Decorative Carvings of Ridge- Tranguerah Mosque
Source: Field Work

The elongated ridge ends in Classical Chinese Architecture, similar to other decorative elements in this style, hold sculptures and motifs of symbolic animals. Under the influence of Islamic culture, the ridge ends in vernacular Melaka mosques

have been designed around floral motifs. As a result of comparison between ridge ends in Classical Chinese Architecture in Mainland China, and in the Peninsula, as well as in vernacular Melaka mosques, it can be said that the ridge ends in Melakan Islamic architecture are simplified variations of Classical Chinese Architecture. Figure 6.13 and 6.14 show, respectively, ridge ends' ornaments in imperial practices in Northern China, and commoners' buildings in Southern China, while Figure 6.15 and 6.16 present the ridge ends ornaments in Southern China and Melaka respectively. Table 6.4 illustrates the projected ridge corners in case studies. It should be noted that the ridge ends in Kampung Hulu mosque's prayer hall are simple and not elongated.

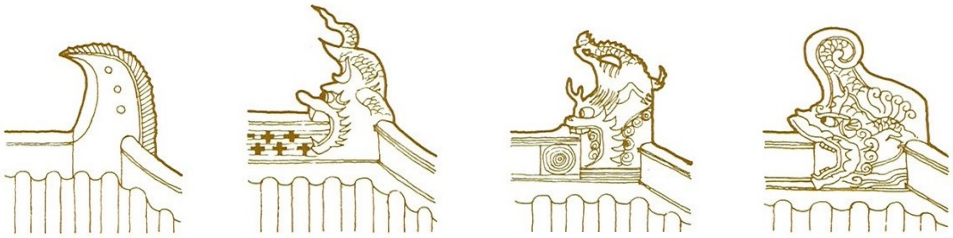


Figure 6.13: Ridge ornaments in various dynasties' Official Buildings
Source: Zhong et al., 1989

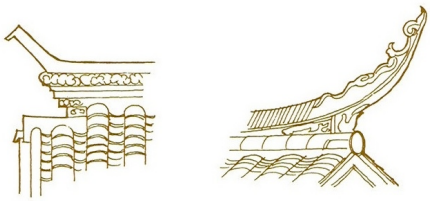
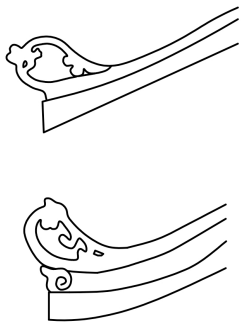
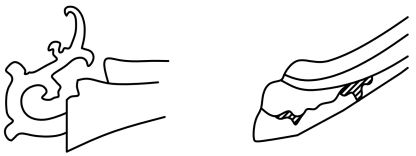
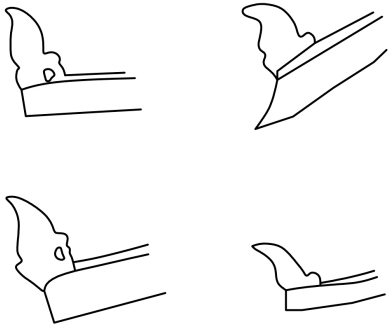
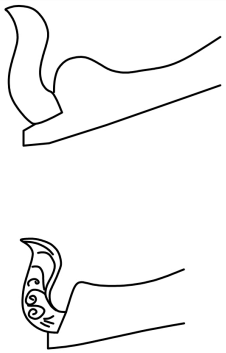
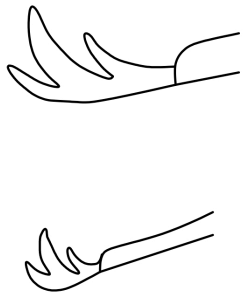


Figure 6.14: Ridge ornaments in non-official buildings
Source: Zhong et al., 1989

Figure 6.15: Southern Chinese ridge end
Source: Knapp, 2004

Figure 6.16: Melakan Chinese temples ridge end
Source: Field Work

Table 6.4: The Elongated Ridge End in Case studies (Author)

Case study 1: Kampung Hulu Mosque	Case study 2: Kampung Keling Mosque	Case study 3: Tranguerah Mosque
	 * The ridge's end of the main prayer hall's roof in this sample is simply curved and unadorned. The presented elongated end drawing illustrates the ablution pool's elongated ridge's end.	
Case study 4: Peringgit Mosque	**Case study 5: Pengkalan Rama Mosque**	**Case study 6: Machap Lama Mosque**
		

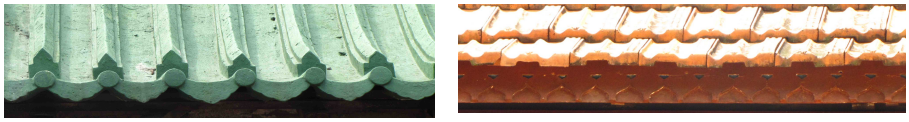
The Eave or Fascia Board

Both Northern and Southern Chinese architecture are known for decorative eaves, especially dramatic projected eave corners. Eaves in Classical Chinese Architecture are known not only for their aesthetic qualities but also for their functional purposes, whilst Chinese temples in Melaka, similar to the case studies in this research, introducing eaves and corner eaves that are restricted to decorative and symbolic purposes. Although in the majority of Classical Chinese practices, roof eaves have gotten great attention in design but most of the Chinese temples in Melaka represent much more simplified form of roof eaves. Similar to the latter, the selected Melakan mosques do not demonstrate perfectly designed eaves. Exceptionally, in Kampung Keling mosque, in which the roof eaves modestly and perfectly have been designed. Figure 6.17 and 6.18 show roof eave designs, respectively in China and the Peninsula, while Figure 6.19 representing roof eaves of Kampung Keling and Peringgit mosques.

(a) **(b)**

Figure 6.17: Chinese Roof Eaves- a) Northern Roof Eave, Forbidden City
Source: In 123rf. Retrieved September 14, 2013, from https://www.123rf.com/photo_8990552_dragon-on-the-roof-forbidden-city-beijing.html
b) Southern Roof Eave
Source: Knapp, 2004

Figure 6.18: Melakan Chinese temples roof eave
Source: Field Work



(a) **(b)**

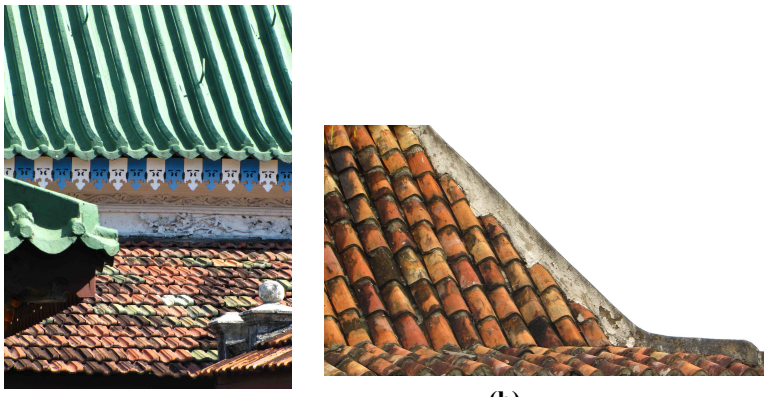
Figure 6.19: a) Kampung Keling Mosque- Designed Roof Eave b) Peringgit Mosque- Simple Roof Eave
Source: Field Work

6.2.1.2 Material

As mentioned earlier, attap and palm leaves were the common materials applied to cover indigenous buildings in Peninsular Malaysia; however, flat clay tiles were also used traditionally in the Peninsula as the roof material. It has been stated that the first imported constructional materials into Melaka were the clay tiles, which were imported from China to cover the roof of Melaka King's palace (Yeang, 1992; Zakaria, 1994). In China, the application of colour glazed clay or ceramic tiles for imperial palaces and temples, also the use of grey clay or ceramic tiles for commoners buildings were prevalent since the ancient times (Cai and Lu, 2008). Consequently, it can be postulated that the application of this kind of clay tiles that are visible in vernacular Melaka mosques, is an influence from Chinese architecture. It should be noted that the Pengkalan Rama Mosque's roof has been not covered by this type of clay tiles.

Figure 6.20 illustrates various clay tiles used in Chinese practices, while Figure 6.21 is presenting clay tiles applied in Kampung Keling and Macap Lama mosques. The material used to cover other case studies' roofs is represented in Table 6.5.

Figure 6.20: Chinese Roof Tiles- a) Northern Chinese style-Forbidden City b) Southern Chinese Style- Xichan Temple
Source: In Flikr. Retrieved October 24, 2014, from https://www.flickr.com/photos/leif_petersen/5900409336/in/photolist-9Zp98s-b3Z49M-dJyiLc-7dvaVV-nSwzrm-dhXoE2-5vMQJ-aBvsXz-f889RF-fFdSdf-5HjJ5F-hjp4oY-kp2LdH-asMndm-dhUKJo-bdXfQD-6cFaM-aowA2M-4HkXgy-8VGpep-hLDayh-kbbfz4-92Z1Qx-2siTP6-hrphgN-dkgMeC-j6kL8S-85h8Vv-bmHLh-bUspus-7q5wvn-2293cx-b9XxKz-bbyt6x-wTrzU-bpsSQY-59tz4m-5HUcaR-9vxKYg-a4Hftu-omK6k9-5LadMN-a4EDea-kuwgnD-9Qx9ii-bhWvgc-eau747-9rNoJK-2vgeV-mhJHD



(a) **(b)**

Figure 6.21: The Roof's Clay Tiles- a) Kampung Keling Mosque b) Machap Lama Mosque
Source: Field Work

Table 6.5: The Roof (Field Work)

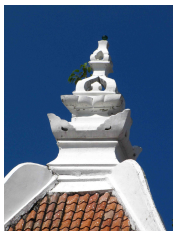
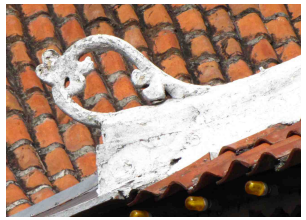
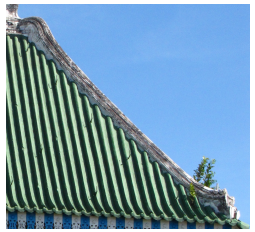
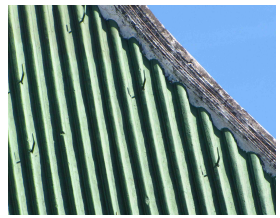
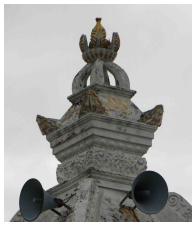
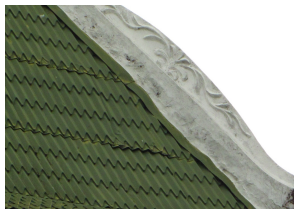
Item / Case Study	Ornamentation			Material (Clay Tiles)
	Crown	Ridge	Eave Corner	
Case study 1: Kampung Hulu Mosque				
Case study 2: Kampung Keling Mosque				
Case study 3: Terengkera Mosque				

Table 6.5, Continued

Item / Case Study	Ornamentation			Material (Clay Tiles)
	Crown	Ridge	Eave Corner	
Case study 4: Peringgit Mosque				
Case study 5: Pengkalan Rama Mosque				
Case study 6: Machap Lama Mosque				

6.2.2 The Facade

The critical position of facade in architectural design is indisputable; however, in both Classical Chinese Architecture and vernacular Melaka mosques, this architectural component has been always dominated by the significance of the strong and heavy roof. As stated earlier in Chapter Three, the facade of a Chinese building consists of various architectural elements, which all are magnificently adorned. The dogoung, slender columns (mostly in circular shape), lightweight walls, and lattice doors and windows form the facade of a typical Chinese hall, while all of them are coloured, painted or sculptured in patterns, which have been driven from Chinese folks and traditions (Liu, 1989; Fisher, 1993; Cai and Lu, 2008). In contrast, the vernacular Melaka mosques demonstrate extremely modest and simple facades in form and ornamentation. In this section, the body of the main prayer hall in the selected mosques will be analysed based on form, ornamentation, and proportion and will be compared to Classical Chinese equivalent evidence in order to provide the opportunity to achieve a comprehensive interpretation of Chinese influence on the formation of vernacular Melaka mosques' facades.

6.2.2.1 Fenestration

The arrangement of doors, windows and columns in Chinese halls has been changed and has become more sophisticated and elaborated during the time; however, the basic principals have been maintained. In Chinese halls the columns, doors and windows are arranged in a way to emphasize rhythm and increase the aesthetic values. In vernacular Melaka mosques, the facade did not follow any specific form and arrangement, so each vernacular Melaka mosque represents a completely different form of facade from other Melakan mosques. Although there are no recorded documents about the source and origins of architectural influence on vernacular

Melaka mosques' facade, it can be postulated that the facades in these mosques have been formed as a result of functional purposes of an Islamic prayer hall, as well as environmental considerations. However, there is a repetitive form of arrangement in facade's openings in case studies, which was common in early stages of Classical Chinese architectural development (especially during the Song and Qin Dynasties), and also is discernible in the majority of Chinese temples in Melaka. Placing a door in the middle of the facade with two flanking windows is a style that can be seen in the earlier Chinese hall in Mainland China, in the main entrances of Chinese temples in Melaka, and in the southern facade of Kampung Hulu mosque, the eastern and southern facades of Peringgit and Macap Lama mosques. The Mehrab Wall in all case studies, except for Pengkalan Rama mosque also imitates this arrangement but introduces the Mehrab in the middle instead of the door.

Figure 6.22 and 6.23 represent the mentioned arrangement of the door with flanking windows in Chinese halls in Mainland China and in Chinese temples' entrances in Melaka respectively, while Figure 6.24 presenting Kampung Hulu, Peringgit, and Macap Lama mosque's facades, in which this arrangement is followed. Although it is not certain, there is a chance that this arrangement be an influence from Classical Chinese Architecture.

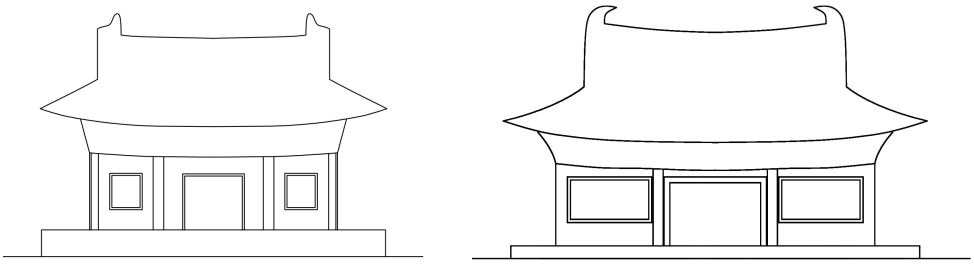
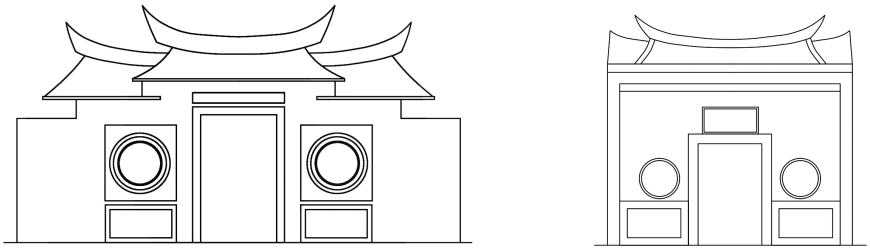


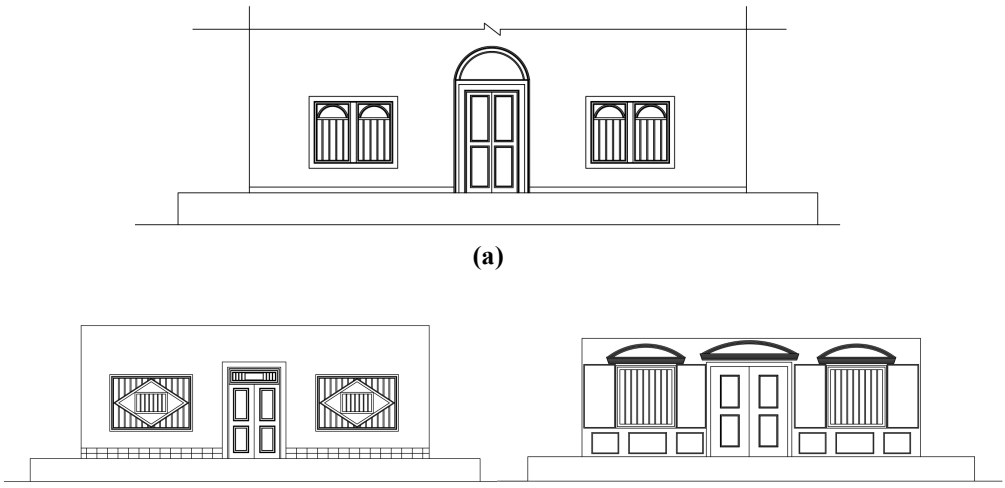
Figure 6.22: Fenestration in Classical Chinese Architecture- a) Chinese Hall, Song Dynasty b) Chinese Hall, Qin Dynasty
Source: Drawn by Author, Source from Liang, 1984

Moreover, the paneling or latticework in the form of squares, diamonds, and parallelograms were widely used in Classical China (Fazio et al., 2008). As it is discernible in Table 6.6, the Kampung Hulu, Kampung Keling, Tranguerah, and Perringit mosques' mihrab wall, as well as the east view of the latter mosque hold lattices in the form of diamond.



(a) (b)

Figure 6.23: Fenestration in Chinese Temples in Melaka- a) Cheng Hoo Teng Temple b) San Duo Temple
Source: Author



(a)

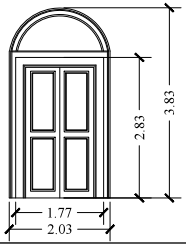
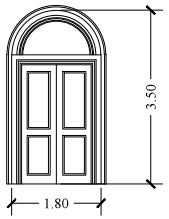
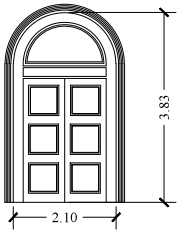
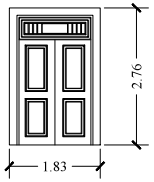
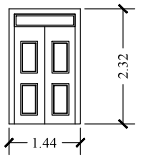
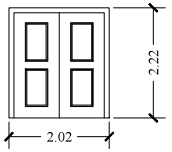
(b) (c)

Figure 6.24: Fenestration in Case studies- a) Kampung Hulu Mosque, South View b) Peringgit Mosque, East View c) Machap Lama Mosque, East View
Source: Author

6.2.2.2 Proportion

As mentioned earlier in Chapter Three, Chinese architects under the supervision of imperial authorities, strictly regulated the constructional methods and the proportions of Chinese halls and compiled them in the books such as the Song Yingzao Fashi, and the Gongcheng Zuofa Zeli (Fang, 2001). From recorded documents, it can be understood that Chinese halls were erected with the certain proportion of 1:2.44 for the middle-work (the body of building) (Kohl, 1984). The measurements on plans and elevations indicate that none of the selected mosques in this research demonstrate the observance of this proportion; however, these mosques demonstrate the proportion of 2:3 in some of the openings, which was a prevailing proportion in Chinese architecture (Lung and Chan, 1998). Table 6.6 presents all the openings in case studies, while the doors and windows that follow this proportion are highlighted.

Table 6.6: Proportion of Openings (Author)

	Feature \ Mosque	Kampung Hulu	Kampung Keling	Terengkera	Peringgit	Pengkalan Rama	Machap Lama
East View	Door Type 1						
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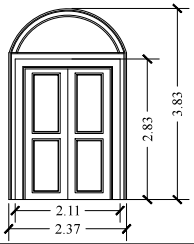
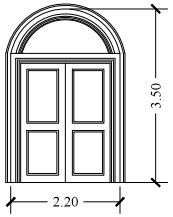
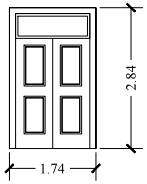
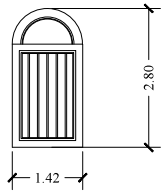
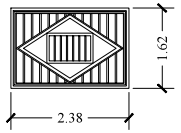
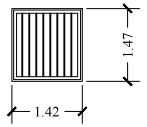
	Door Type 2						
		2.11/2.83= 1:1.34 2.03/3.83= 1:1.62 ≈ 2/3	2.20/3.50= 1:1.6 ≈ 2/3			1.74/2.85= 1:1.63 ≈ 2/3	
	Window						
	Proportion (Width/Height)	1.88/2.32= 1:1.23	1.42/2.80= 1:1.97		1.62/2.38= 1:1.47 ≈ 2/3		1.42/1.47= 1:1.03

Table 6.6, Continued

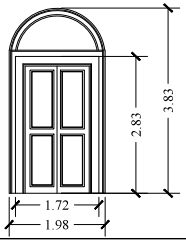
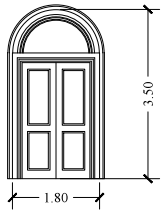
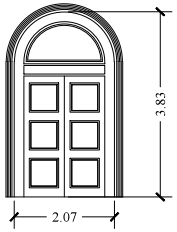
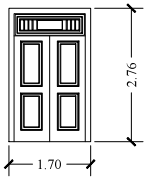
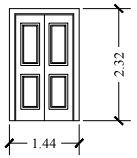
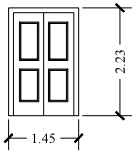
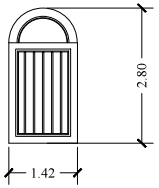
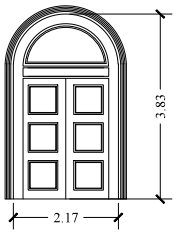
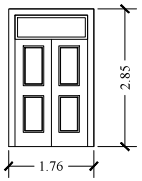
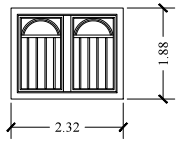
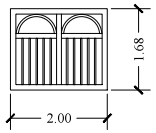
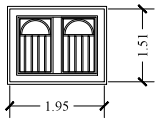
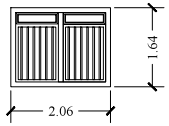
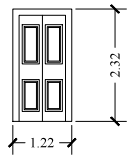
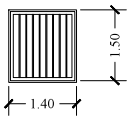
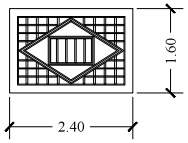
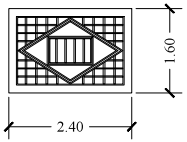
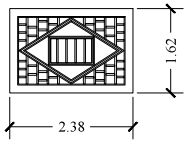
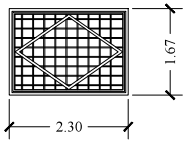
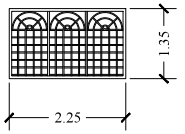
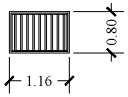
	Mosque / Feature	Kampung Hulu	Kampung Keling	Terengkera	Peringgit	Pengkalan Rama	Machap Lama
South View	Door Type 1						
	Proportion (Width/Height)	1.72/2.83= 1:1.6 ≈ 2/3 1.98/3.83= 1:1.93	1.80/3.50= 1:1.94	2.07/3.83= 1:1.85	1.70/2.76= 1:1.63 ≈ 2/3	1.44/2.32= 1:1.61 ≈ 2/3	1.45/2.23= 1:1.53 ≈ 2/3
	Door Type 2		** Window Type 1 				
	Proportion (Width/Height)		1.42/2.80= 1:1.97	2.17/3.83= 1:1.76		1.76/2.85= 1:1.62 ≈ 2/3	
	Window		*** Window Type 2 			**** Door Type 3 	
	Proportion (Width/Height)	1.88/2.32= 1:1.23	1.88/2.32≈ 1:1.2	1.51/1.95≈ 1:1.3	1.64/2.06= 1:1.25	1.22/2.32≈ 1:1.9	1.40/1.50= 1:1.07

Table 6.6, Continued

	Feature \ Mosque	Kampung Hulu	Kampung Keling	Terengkera	Peringgit	Pengkalan Rama	Machap Lama
Mehrab Wall View	Window						
	Proportion (Height/Width)	1.60/2.40= 1:1.50 = 2/3	1.60/2.40= 1:1.50 = 2/3	1.62/2.38= 1:1.44 ≈ 2/3	1.67/2.30= 1:1.37	1.35/2.25= 1:1.66 ≈ 2/3	0.80/1.16= 1:1.45 ≈ 2/3

6.2.2.3 Ornamentation

The ornamentations of the facades in Chinese halls are plentiful, which have been described in details in Chapter Three. In contrast to Chinese halls, the vernacular Melaka mosques represent extremely simple and modest facades, which show no similarity to ornamental means in Chinese architecture. In Kampung Hulu mosque, the only ornamental features on the exterior walls are the yellow coloured bands around the openings, and the application of coloured ceramic tiles in the lowest part of the walls. In Kampung Keling, white ceramic tiles and a band of coloured ceramic tiles in the lowest part cover the exterior walls. Tranguerah mosque's exterior walls are covered by white stucco coating and a band of coloured ceramic tiles in the lowest part, in addition to the single coloured ceramic tiles with floral motif, which are placed separately from each other on the upper part of the walls. White stucco coatings also cover Pengkalan Rama mosque's exterior walls, while the only ornamental elements are the simple carvings, and a band of coloured ceramic tiles with floral motif on the lowest part of the walls. White stucco coatings and a band of blue coloured ceramic tiles on the lowest part cover the Peringgit mosque's exterior walls as well. Although it seems that the decorative elements of Chinese architecture such as sculptured columns and colour paintings have not influenced vernacular Melaka mosques (except for Machap Lama Mosque, which is explained later), it has been suggested that the application of ceramic tiles on the exterior walls of these mosques is a Chinese influence. As it is discernible in Figure 6.25 and 6.26, the ceramic tiles used on the facades of Chinese shophouses in Melaka and case studies are similar. It may or may not that this type of ceramic tiles imported from China (there are some suggestions that these tiles are imported from Europe; however, through the lure process in Melaka, the author has been told that these tiles are from China), but the use of coloured ceramic tiles on the facade of the building is a Chinese influence.

Figure 6.25: The Application of Coloured Ceramic Tiles on Shophouses' Façade, Melaka
Source: Field Work

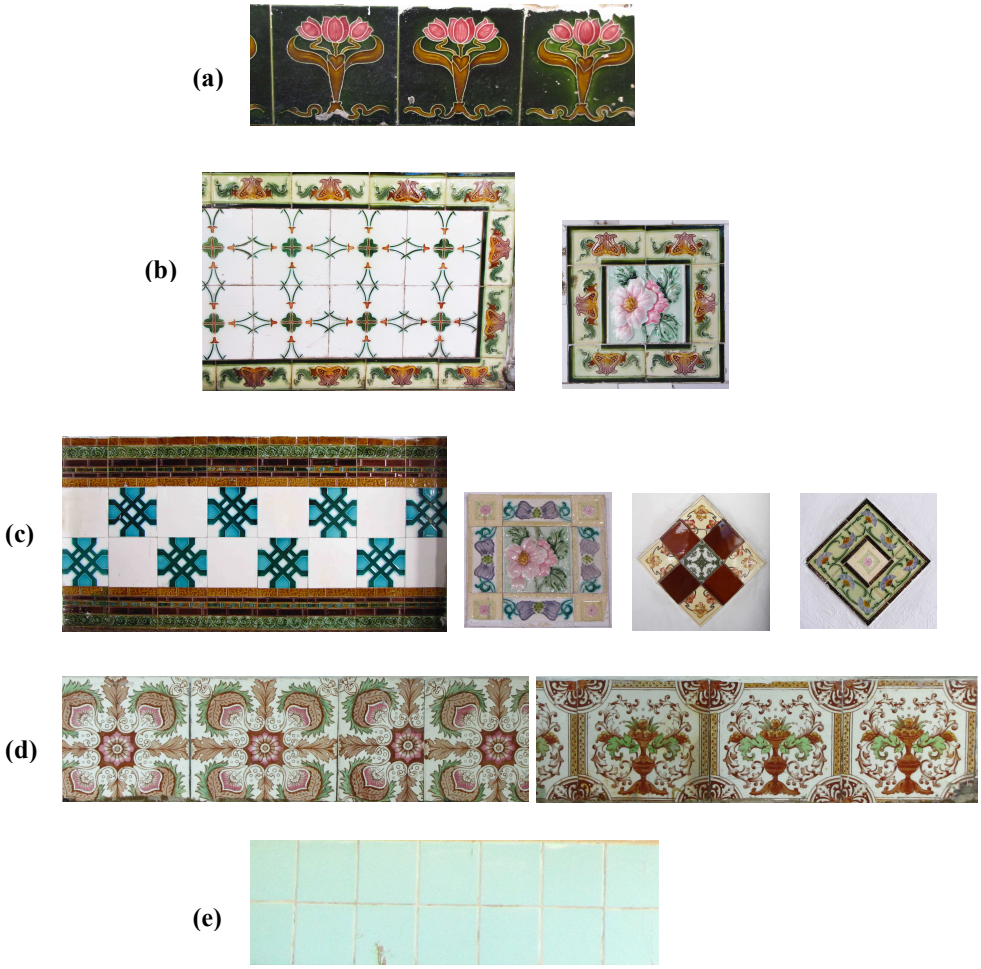


Figure 6.26: The Application of Coloured Ceramic tiles on Traditional Melaka mosque's Façade- a) Kampung Hulu Mosque b) Kampung Keling Mosque c) Tranguerah Mosque d) Pengkalan Rama Mosque e) Peinggit Mosque
Source: Field Work

In this regard, Macap Lama mosque demonstrates the most fascinating example of Chinese influence on ornamental means of the facade. As mentioned earlier, the use of colour-paintings on the walls of buildings was very common in Chinese architecture

as both Northern and Southern Chinese architecture represents magnificent specimens of colour-paintings on the walls. In Northern China, colour-paintings with the motifs of dragons, phoenix and rare animals, natural forces and elements, fairies, flowers and plants were prevalent (Zhong et al., 1986; Liu, 1989), while in Southern China, colour-paintings with themes related to commoners traditional beliefs, and Chinese folks were widespread (Juliano, 1981). It must be mentioned again that in Chinese culture, colours were divided into orthodox (used only by emperors, such as yellow and red) and unorthodox (used by commoners, such as gray and greenish white) (Zhong et al., 1986). Figure 6.27 illustrates an example of colour-paintings in Chinese architecture in the Peninsula. As it is discernible, these paintings are in unorthodox colours. Following this ornamental mean, Macap Lama mosque represents interesting colour-paintings in floral motifs and in orthodox colours, which is conceivable in Figure 6.28.

Figure 6.27: Colour-Paintings on the Façade of Poh San Teng Temple, Melaka
Source: Field Work

Figure 6.28: Colour-Paintings on the Façade of Macap Lama Mosque
Source: Field Work

Another Ornamental element that can be mentioned in this section is the carved bracket in the corner of the openings. As represented in Figure 6.29, the application of the carved bracket in Chinese practices, especially in Southern China is common. Among the selected mosques, the Tranguerah mosque holds fascinating carved brackets in the corners of one of the openings, which is discernible in Figure 6. 30.

Figure 6. 29: The Carved Bracket- Southern Chinese Architecture
Source: Knapp, 2004

Figure 6.30: The Carved Bracket, Tranguerah Mosque
Source: Field Work

Another decorative mean in the selected Melakan mosques, which probably has been borrowed from Chinese architecture, is the application of yellow colour on the surfaces of the walls and columns. As stated before in Chapter Three, the application of yellow colour in royal buildings was extremely common in China (Ru and Peng, 1998; Knapp, 2004). Furthermore, as stated earlier in Chapter Two, under the influence of Chinese culture Sultan Muhamad Shah from Melaka Kingdom made the yellow colour as the royal colour (Zakaria, 1994). Kampung Hulu, Kampung Keling, Tranguerah, and Peringgit mosques demonstrate the use of this Chinese ornamental method in various parts of the designs (Refer to Figure 6.31).

(a)

(b) **(c)**

Figure 6. 31: The application of yellow Colour in Case studies a) Kampung Hulu Mosque b) Kampung Keling Mosque C) Peringgit Mosque
Source: Field Work

6.2.3 The Base

Vernacular Melaka mosques, in contrast to other vernacular mosques erected in the Peninsula, stand on a raised base instead of having elevated floor on wooden piling and supporting stilts (Chen, 1998; Tajuddin, 2000; Nasir, 2004). As mentioned earlier, the application of a solid base is prevalent in Classical Chinese Architecture and is one of the most principal features of Chinese buildings. On the other hand, from archeological excavations, it has been postulated that the wooden Hindu-Buddhist temples, which have been erected in Peninsular Malaysia prior to the advent of Islam were raised on a simply compacted base (Dumarcay and Smitties, 1998). The architectural practices in the region prior to the advent of Islam were the combinations of Austronesian and Hindu-Buddhist architectural features. As a result, both the raised floor plans, and the bases were constructed in the area; however, the application of the base in Southeast Asian practices gradually disappeared and in the early mosques the use of the raised floor plan remained widespread. The application of the base in Melakan mosques can be an influence from Hindu-Buddhist architecture; however, this feature has strengthened by the influence of Chinese architecture. Moreover, all the scholars believe that this architectural feature in vernacular Melaka mosques, in fact, is an influence from Chinese architecture (Yeang, 1992; Chen, 1998; Tajuddin, 2000; Nasir, 2004). This notion can be verified by the fact that the vernacular mosques in the areas where did not have close contacts with China are not influenced by Chinese architecture and do not represent the base. They follow indigenous Southeast Asian architecture by sitting on supporting stilts above the ground.

In a city like Melaka, where the Chinese architecture has become woven into the local architectural scene, the vernacular mosques introduce simple and modest bases, which are very different from the bases erected in China in form and ornamentation. However, the bases in Kampung Hulu and Kampung Keling mosques

still represent some decorative elements that are reminiscent of Classical Chinese Architecture, especially Southern Chinese style. It is interesting to know that Chinese temples in Melaka generally do not represent the base and the building sits directly on the ground. As a result, the appearance of the base in vernacular Melaka mosques is an influence from architectural practices in Mainland China.

The body of the base in Classical Chinese Architecture is profusely carved and surrounded by highly ornamented balustrades (Liu, 1989), while the bodies of the bases in vernacular Melaka mosques are extremely simple and modest. However, as presented in Figure 6.32, in Kampung Keling mosque, sheen coloured ceramic tiles cover the body of the base, and the steps leading to it, which is another influence from Chinese architecture.

Figure 6.32: The Coloured Ceramic Tiles on the Body of Base and the Steps, Kampung Keling Mosque
Source: Field Work

Tranguerah and Macap Lama mosques hold simple railings; probably formed under the influence of European style, while Peringgit mosque is representing simple wooden balustrade. Pengkalan Rama mosque's base does not hold any railing or balustrade. Among the case studies, the Kampung Hulu and Kampung Keling mosques show bases, surrounded by the balustrades, which demonstrate signs of features from Chinese ornamentation. As illustrated in Figure 6.33, the application of yellow glazed spots on the surface of decorative elements is a common practice in Southern Chinese architecture. The balustrade in Kampung Hulu and Kampung Keling mosques present

this ornamental mean, which is illustrated in Figure 6.34; however the motifs are from the European influence.

Figure 6. 33: Opera House- Interior Ornamentation, Southern China
Source: Knapp, 2004

(a) **(b)**

Figure 6.34: The Balustrade's Ornamentation- a) Kampung Hulu Mosque
b) Kampung Keling Mosque
Source: Field Work

Another decorative feature that is worthy to mention, is the application of ornamented pedestals in Kampung Keling and Tranguerah mosques. All case studies demonstrate pillars, which sit on the simply carved stone pedestals; the archeological evidence in Peninsular Malaysia reveals that in Hindu-Buddhist temples erected in the region, the wooden pillars sit on the stone pedestals, so this architectural feature probably is an influence from Hindu-Buddhist architecture in the Peninsula. Nevertheless, the Kampung Keling and Tranguerah mosques show different pedestals in ornamental means, which can be an influence from Chinese decorative style. Figure 6.35 provides a comparison between carved pedestal in Southern Chinese architecture and Tranguerah mosque, while Figure 6.36 is illustrating ornamented pedestals in Kampung Keling and Tranguerah mosques.

(a) (b)

Figure 6.35: The Carved Stone Pedestal
a) Southern China
Source: Knapp, 2004
b) Tranguerah Mosque
Source: Field Work

(a) (b)

Figure 6.36: Ornamented Pedestal with Coloured Ceramic Tiles a) Kampung Keling Mosque
b) Tranguerah Mosque
Source: Field Work

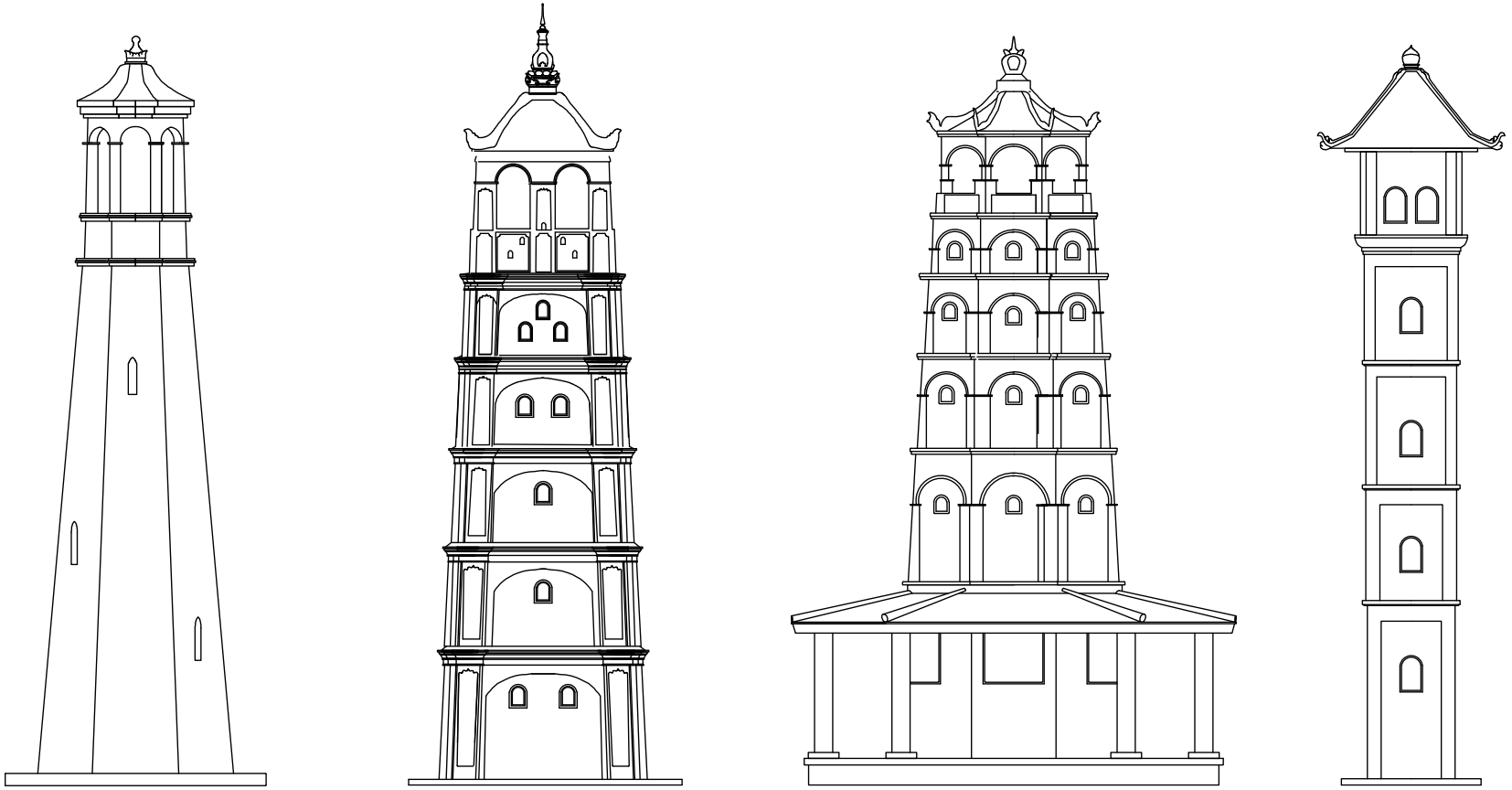
6.2.4 The Minaret

Sound to pray ritual in Islam is different from other religions since human voice, as an instrument has been chosen to call the prayers, which can be heard from top of the monumental element of the minaret. Due to its important function, the minaret became one of the main elements that distinguishes mosque from other religions' house of worships. The history of Islamic architecture has faced numerous forms and designs in the construction of the minaret world wild, which still share same basic characteristics that make them identifiable from other types of towers. Although

the earliest mosques lacked minarets, but the minaret, as well as the dome, unconventionally represents most distinguished elements in Islamic architecture.

The Islamic monument of Minaret has undergone a fascinating metamorphosis in vernacular Melaka mosques. It is not uncommon in Melaka that a vernacular mosque lacked this monument while the one that has a minaret represents it in a very different way from Middle Eastern style. There are possibilities that the early vernacular mosques in Melaka did not have minaret and used traditional ways to call for pray, such as a drum and taboo. However, in later practices, a pagoda-like tower constructed to function as a minaret and became one of the most recognizable monumental elements in vernacular Melaka mosques. Melakan minarets have been influenced by Buddhist pagodas in China and evoke tower-style and close-eaves style pagodas (refer to Figure 6.38); however, these minarets alike the other architectural features in this style do not represent Chinese architectural influence without a process of absorption and integration. Among the case studies in this research, Kampung Hulu, Kampung Keling, Tranguerah, and Pengkalan Rama mosques demonstrate the minaret (refer to Figure 6.37), whilst Perringit and Macap Lama mosques not including this monumental element.

It is interesting to know that although there are examples of Chinese style mosques in Mainland China, which represent pagoda-like minarets, the majority of these Chinese style mosques hold Chinese pavilions as minarets (especially pavilions in temple and palace complexes) rather than pagodas, while a minaret in the vernacular Melaka mosque resembling perfectly a pagoda. As mentioned earlier in Chapter 3 the Great Mosque of Xian (refer to Figure 3.15) is of the earliest remained mosques in China since Tang Dynasty, which holds a pavilion-like minaret (refer to Figure 3.16). Figure 6.37 illustrates the minarets in Kampung Hulu, Kampung Keling, Tranguerah and Pengkalan Rama mosques.



(a) (b) (c) (d)

Figure 6.37: The Minaret- a) Kampung Hulu Mosque b) Kampung Keling Mosque c) Tranguerah Mosque d) Pengkalan Rama Mosque (Without Scale)
Source: Author

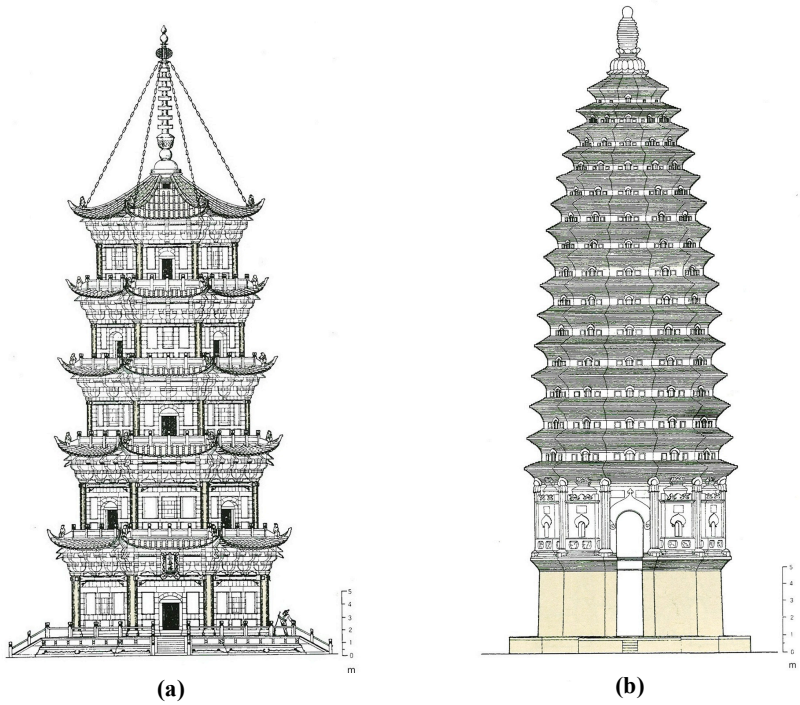
6.2.4.1 Form

From the comparison represented in Figure 6.37 it can be understood that the minaret of Kampung Hulu mosque is an integration of Middle Eastern architectural style and lighthouse design. Unlike the Chinese pagoda, shallow eaves or multiple tiled roofs do not divide the body of this minaret into several stories, except for one shallow projected band that links the tapering lower part of the minaret to perfectly vertical upper part. The semi-circular arch openings in the upper part of the minaret's body are similar to Roman architecture and can be an influence from European presence in Melaka.

The minarets of Kampung Keling and Tranguerah mosques are perfect reminiscent of tower-style, as well as close-eaves style pagodas. The body of these minarets, similar to tower-style or close-eaves style pagodas is divided into several stories; however, unlike the Chinese pagodas, the shallow projected bands on the surface of the body accentuate false stories while in Chinese pagodas, each story functioning to house relics and sacred writings. Moreover, the body of both minarets of Kampung Keling and Tranguerah mosques is divided into six levels while, as stated before, the number of stories in Chinese pagodas is usually in odd numbers. Both minarets contain a gallery in the upper part, which bear semi-circular Roman arch openings on each side. Following tower-style pagoda, in these two minarets each story diminishes slightly in both height and width as the structure rises to create a fascinating architectural design.

In Pengkalan Rama mosque, the minaret is a recent additional structure (1978), which its body is divided into five stories by shallow projected bands; however, in contrast to Chinese pagodas the stories of this minaret do not diminish in size ascending to the top, while in tower-style and close-eaves style pagodas this manner is prevalent. Still Pengkalan Rama minaret represents signs of Chinese influence in its

roof design, which will be discussed later. In all mentioned minarets, the gallery in the upper part of the minaret is accessible by interior stairs. Figure 6.38 presents examples of tower-style, as well as close-eaves style pagodas from Mainland China, which have influenced the minarets in vernacular Melaka mosques.



(a) (b)

Figure 6.38: Buddhist Pagodas- a) Tower-style Pagoda: The Renshou Pagoda, Kaiyunan Monastery, Liang Dynasty b) Close-eaves Pagoda: The Songyue Pagoda, Northern Wei Dynasty
Source: Wei, 2000

Studies in mosque architecture indicate that minarets can be found in the square plan, especially in West African style, but they are mostly erected in circle and octagonal form. Although minarets in Kampung Hulu and Tranguerah mosques are octagonal in plan and minarets in Kampung Keling and Pengkalan Rama mosques are rectangular, these minarets do not imitate or even resemble any of minarets from Middle East, Africa or India in the plan's form since they strongly follow Chinese pagodas' floor plan design. As mentioned earlier in Chapter 3, Chinese pagodas were mostly built in square, hexagonal, and octagonal shapes (Wei, 2000). Figure 6.39

presents a collection of Chinese pagodas plans while Figure 6.40 demonstrating mentioned Melakan minarets' plans. Through comparison between two collections presented in the figures, analogies between minarets' plans in Melaka and Buddhist pagodas in China are evident.

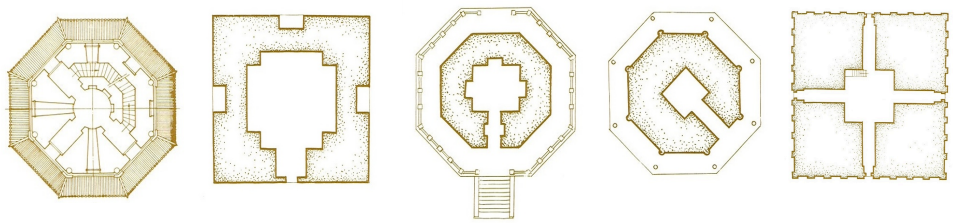


Figure 6.39: Various Shapes of Pagodas' Plans
Source: Zhong et al., 1986

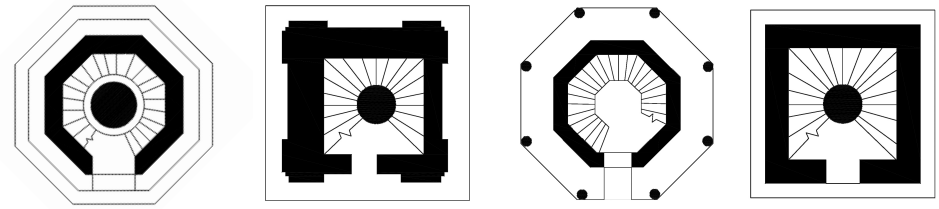


Figure 6.40: The Minaret's Floor Plans- a) Kampung Hulu Mosque b) Kampung Keling Mosque c) Tranguerah Mosque d) Pengkalan Rama Mosque
Source: Author

6.2.4.2 Ornamentation

In contrast to the body of Buddhist pagodas in China, the body of Melakan minarets does not represent many courses of eaves, cornices, pillars, or dou gong brackets. Melakan minarets, compare to Chinese pagodas, demonstrate less decorated surfaces; however, minarets in Kampung Keling, Tranguerah, and Pengkalan Rama mosques still hold shallow projected bands to accentuate the levels, and create rhythm, as well as several openings and carvings on the bodies. Despite enormous differences in elevation designs of Melaka minarets and Buddhist pagodas in China, the roofs of these minarets show strong influence from Chinese ornamental elements. Similar to

roof ornamental elements of the main prayer halls in selected mosques, the minarets hold the crown, pronounced ridges with projected corner ends. Figure 6.41 represents these decorative elements in detail, which are formed and carved in floral motifs, very different from the crowns and other ornamental elements in Buddhist pagodas in China (the ornamental elements in minarets are reminiscent of Indian-Buddhist decorative themes). Although the minaret in Pengkalan Rama mosque holds Chinese features such as curved ridges with elevated ends, the crow has been designed in the shape of a dome (a Middle Eastern pattern). Table 6.7 provides a comparison between different aspects of the case studies' minarets.

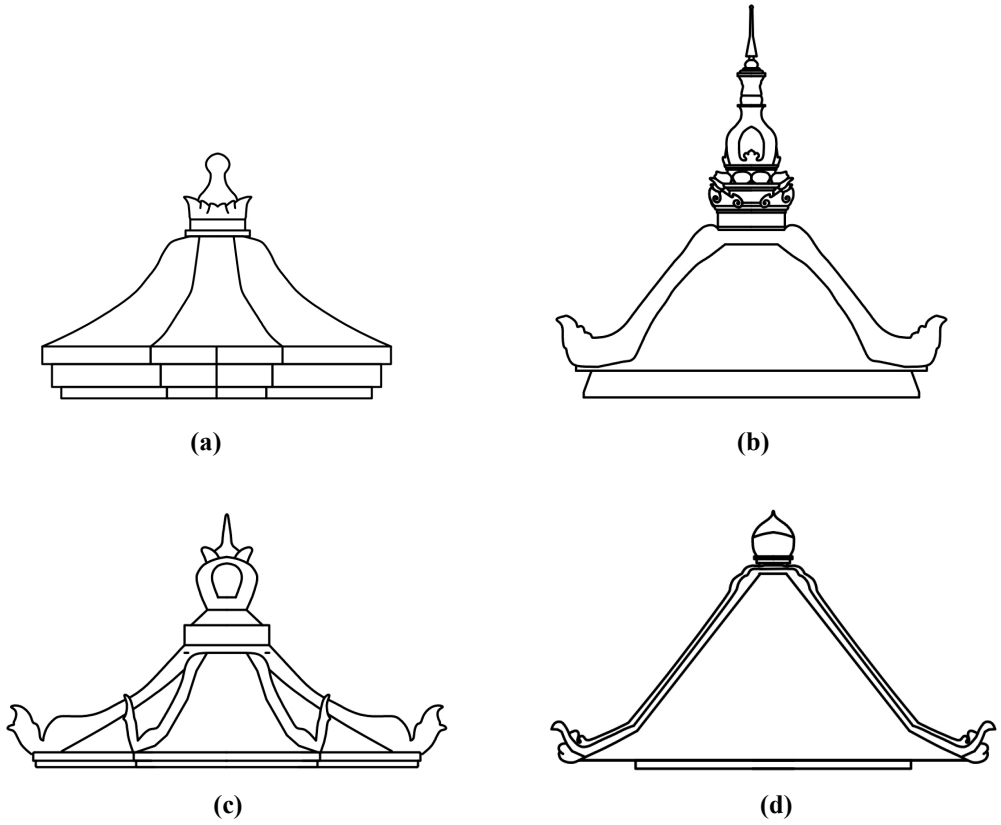


Figure 6.41: The Minarets' Crowns, Ridges and Elongated Corner Ends- a) Kampung Hulu Mosque b) Kampung Keling Mosque c) Tranguerah Mosque d) Pengkalan Rama Mosque
Source: Author

Table 6.7: The Minaret (Field Work)

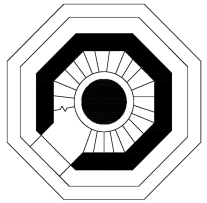
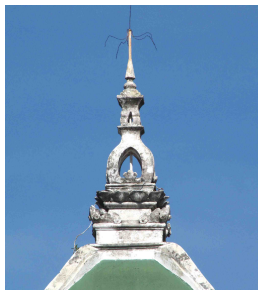
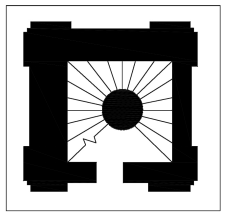
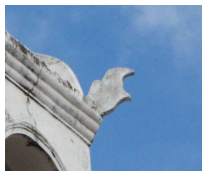
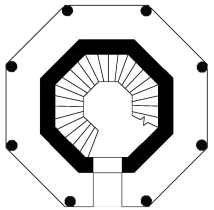
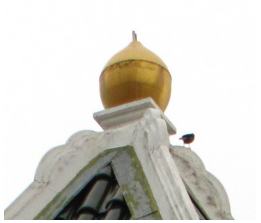
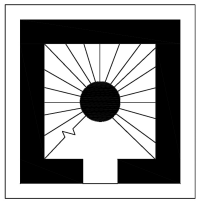
Item / Case Study	Overall View	Ornamentation		Plan
		Crown	Eave Corner	
Case study 1: Kampung Hulu Mosque			**None**	
Case study 2: Kampung Keling Mosque				

Table 6.7, Continued

Item / Case Study	Overall View	Ornamentation		Plan
		Crown	Eave Corner	
Case study 3: Terengkera Mosque				
Case Study 4: Peringgit Mosque	**Without Minaret**			
Case study 2: Pengkalan Rama Mosque				
Case Study 6: Machap Lama Mosque	**Without Minaret**			

6.2.5 The Minbar

Since in Islamic culture the mosque functions as a house of worship, as well as a platform for official government or state announcements, the minbar plays a crucial role in Islamic interior design and furniture making, as the Imam who leads the prayers delivers his seremon sitting on it. The minbar, or pulpit, is always positioned to the right of the mihrab and consists of a staircase of varying height, leading to a small platform, which is often crowned by a cupola/type roof, usually in some attractive shape (Frishman et al., 1994). Varying in size from a mere three steps to examples on a monumental scale with elaborate decoration, the minbar is a feature of almost all mosques (Frishman et al., 1994).

Although traditional mosques in Melaka demonstrate modesty and simplicity like no other mosque architectural style around the world, these mosques possess the most elaborated and adorned minbars, which are ornate with astonishing floral and more or less geometric motif carvings. Comparison between minbar designs in different regions indicates the profound influence of Chinese interior design and furniture making, such as imperial sedan chair on Melakan minbars. The application of the pyramidal roof or Chinese helmet-shape roof (refer to Figure 6.49) with inward curved ridge and carved crown and ornamented eave with projected corners is an example of Chinese art's influence on Melakan traditional minbars. The appearance of the crown on top of the minbars can be seen in many examples of minbars in Mainland China. Figure 6.42 presents examples of imperial Chinese Sedan chairs, while Figure 6.43 illustrating an example of minbar in a Chinese mosque. The influence of Chinese art on minbars in case studies can be justified through comparison between mentioned Figures and Figure 6.44, which represents Kampung Hulu, Kampung Keling and Tranguerah mosques' minbars.

Figure 6.42: Examples of Imperial Chinese Sedan Chairs
Source: Burling, 1953

Figure 6.43: The Minbar, Chinese Islamic Koran Academy, Beijing
Source: In Archnet. Retrieved June 6, 2013, from http://archnet.org/media_contents/15124

(a) (b) (c)

Figure 6.44: The Minbar in Case studies- a) Kampung Hulu Mosque b) Kampung Keling Mosque c) Tranguerah Mosque
Source: Field Work

Although it seems that the decorative themes applied in Melakan minbars must be far apart from those themes used in Chinese furniture or interior walls decoration, the carvings on both Chinese furniture and Melakan minbar are showing similar themes. Figure 6.45 presents an example of Chinese interior design of an imperial hall, while Figure 6.46 representing decorative elements applied in Chinese buildings in the Peninsula. Figure 6.47 shows the carvings in Tranguerah mosque's minbar in detail. The similarities between Chinese art/ interior design and minbar design in vernacular Melaka mosques are noticeable.

Figure 6.45: Chinese Interior Design, Forbidden City, Beijing
Source: Liu, 1989

Figure 6.46: Chinese Ornamentation, Melaka
Source: Field Work

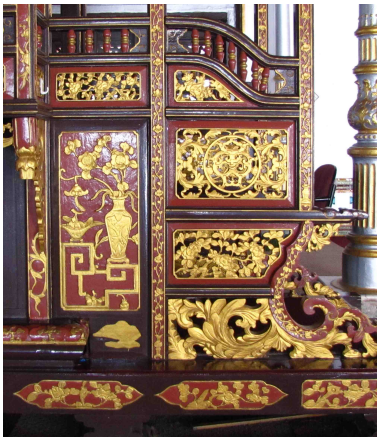


Figure 6.47: The Minbar, Ornamentations, Tranguerah Mosque
Source: Field Work

The influence of Chinese art on Melakan minbars will be emphasized when these minbars are compared to earlier traditional minbars in other states of the Peninsula. Kampung Luat Mosque is the earliest evidence of vernacular mosques in Peninsular Malaysia that is built in its current location (Kelantan) between 16th-17th

centuries (this mosque erected for the first time in the 15th century) (Tajuddin, 2007). Kampung Hulu Mosque is one of the earliest mosques in Melaka erected in 1748. The Comparison between minbars presented in Figure 6.48 illustrates differences in roof design of two mosques and indicates Chinese influence on Melakan minbars. However, this influence has spread from Melaka into Peninsular Malaysia over time, and has manifested itself in many examples of traditional minbars in the region. For instance, Langgar Mosque also located in Kelantan possesses a finely carved ornamented minbar showing inward curved pyramidal roof with crown and projected eave corners in Chinese style (Utaberta, 2012). Table 6.8 presents various parts of minbars in selected mosques.

(a) **(b)**

Figure 6.48 a) Kampung Laut minbar, Kelantan, 16th -17th b) Kampung Hulu minbar, Melaka, mid-18th (Comparison between roof forms verifies the influence of Chinese Art on Melakan minbars)
Source: In e-Warisan Senibina. Retreived August 21, 2013.

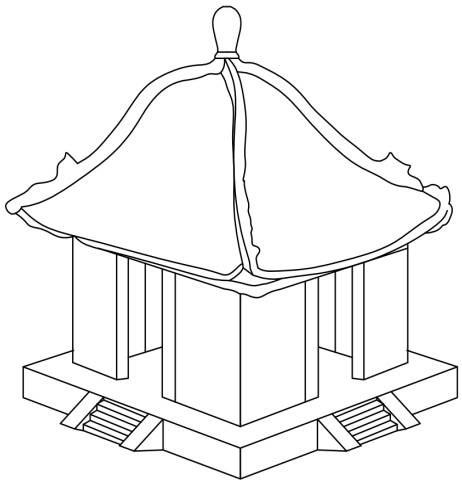


Figure 6.49: Chinese Helmet-shape Roof
Source: Drawn by Author source from Ru and Peng, 1998

Table 6.8: The Minbar (Field Work)

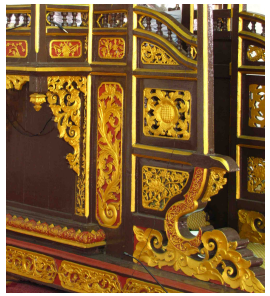
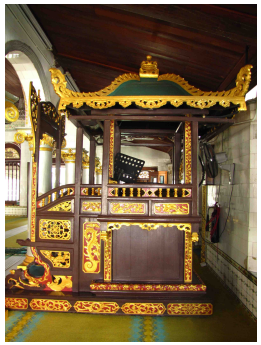
Item / Case Study	Overall View	Ornamentation		
		Crown	Eave Corner	Carving
Case study 1: Kampung Hulu Mosque				
Case study 2: Kampung Keling Mosque				

Table 6.8, Continued

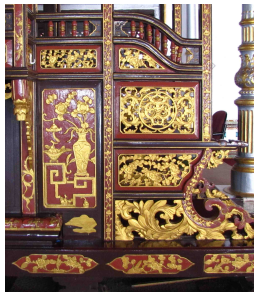
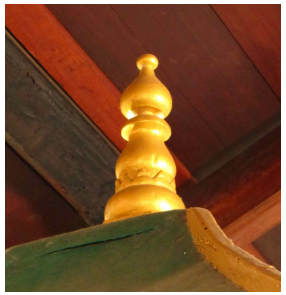
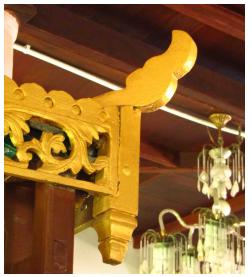
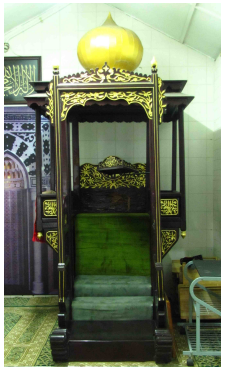
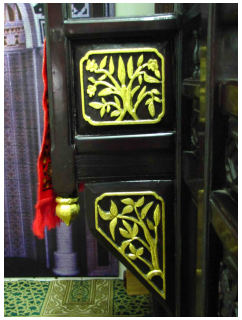
Item / Case Study	Overall View	Ornamentation		
		Crown	Eave Corner	Carving
Case study 3: Terengkera Mosque				
Case study 4: Peringgit Mosque				

Table 6.8, Continued

Item / Case Study	Overall View	Ornamentation		
		Crown	Eave Corner	Carving
Case study 5: Pengkalan Rama Mosque			**None**	
Case study 6: Machap Lama Mosque	**Without Minbar**			

6.2.6 The Portal

In the Islamic architecture, portal has a place of importance. In Middle Eastern and Central Asian mosques, portals are elaborated and beautiful, while Most of the case studies in this research presenting a simple gateway. Among them, Kampung Hulu, Kampung Keling, and Tranguerah mosques represent modest, yet ornamented and interesting portals (refer to Figure 6.50). Portals in Kampung Hulu, Kampung Keling, and Tranguerah mosques are combinations of different architectural styles. To some extent, European, to some extent, Chinese, these portals show no strong sign of traditional Islamic architecture, Malay or Hindu-Buddhist architecture.

(a)

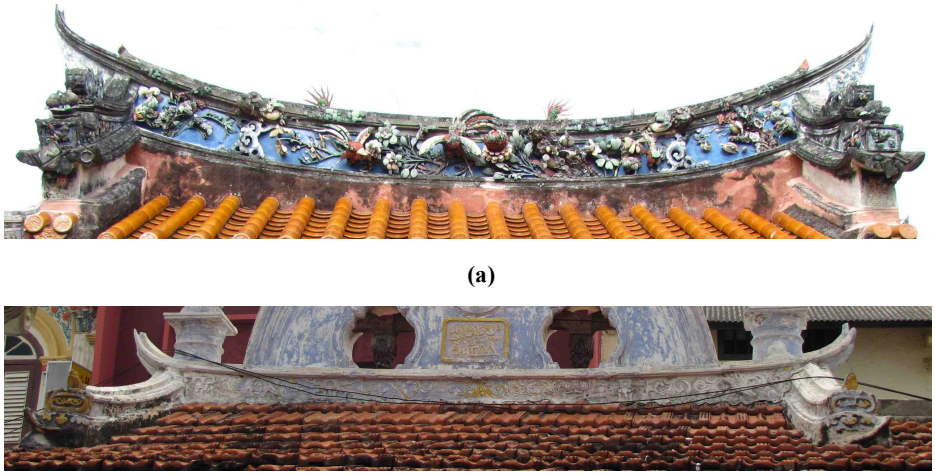
(b)

(c)

Figure 6.50: The Portal a)Kampung Hulu Mosque b)Kampung Keling Mosque c)Tranguerah Mosque
Source: Field Work

Kampung Hulu's portal resembles Chinese pavilion's roof, with elaborated crown and ridges. This roof is covered with Chinese clay tiles. The upper level has the function of placing the traditional drum. Similar to the other Melakan carvings and ornamented elements, the crown and the ridges are variations of Chinese models, whilst the Hindu-Buddhist and Islamic influences are discernible in carving motifs.

Kampung Keling's portal represents an interesting example of Chinese influence. Its roof contains a gable roof with a semicircular pediment at the top and three pinnacles. Gable roof possesses a pronounced main ridge with upward curved corners, carved raised copings, and ornamented gable ends very similar to gable roofs in Southern China buildings and Chinese temples in Melaka. The main ridge is carved in floral motifs; its corners are elongated and curved upward. A comparison between gable roofs of Kampung Keling and San Duo temple (Figure 6.51) portals verifies the idea that Melakan mosques present a simplified variation of Chinese architecture.



(a)

(b)

Figure 6.51: a) San Duo Temple, The Portal's Roof
Source: Field Work
b) Kampung Keling Mosque, The Portal's Roof
Source: Field Work

The silver painted pinnacles on the semicircular pediment, and also the main ridge of the portal's gable roof in this mosque have similarities with crowns in Chinese pagodas. Figure 6.52 presents a comparison between an example of Chinese crown and the pinnacle in Kampung Keling's portal.

(a) **(b)**

Figure 6.52: a) The Fogong Pagoda's Crown, Shanxi, Liao Dynasti, 11th
Source: Liu, 1989
b) The Pinnacle on Kampung Keling Portal's Roof
Source: Field Work

The ornamental elements placed within the semicircular pediment are completely similar to ornamental elements seen in Chinese temples in Melaka and can be an influence from Chinese art and symbolism. However, it is possible that the appearance of this ornamental and symbolic element in both Kampung Keling mosque and Poh San Teng temple is due to Hindu-Buddhist influence, since it resembles more Indian motifs and patterns. Figure 6.53 presents a comparison between Ornamental element in Kampung Keling's portal and Poh San Teng temple's main hall.

(a) (b)

Figure 6.53 The Ornamental Element a) Poh San Teng Temple, Melaka, 18th
Source: Field Work
b) Kampung Keling Mosque, Melaka, 18th
Source: Field Work

The pitch roof of Tranguerah's portal has no gable end, but its beautifully carved pronounced copings perfectly indicate the influence of Chinese architecture. Chinese clay tiles cover both Kampung Keling's and Tranguerah's portals' roofs. Table 6.9 illustrates different architectural features of the mentioned portals.

Table 6.9: The Portal (Field Work)

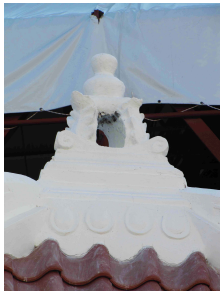
Item / Case Study	Overall View	Ornamentation		
		Crown	Ridge	Eave Corner
Case study 1: Kampung Hulu Mosque				
Case study 2: Kampung Keling Mosque				**None**

Table 6.9, Continued

Item / Case Study	Overall View	Ornamentation		
		Crown	Ridge	Eave Corner
Case study 3: Terengkera Mosque				**None**
Case study 4: Peringgit Mosque		**None**	**None**	**None**

Table 6.9, Continued

Item / Case Study	Overall View	Ornamentation		
		Crown	Ridge	Eave Corner
Case study 5: Pengkalan Rama Mosque		**None**	**None**	**None**
Case study 6: Machap Lama Mosque	**Without Portal**			

CHAPTER 7

CONCLUSION AND RECOMMENDATIONS

7.1 Conclusion

Southeast Asia traditional mosques were developed over a span of at least 700 years to create an Islamic architectural style very different and distinguishable from other Islamic architectural styles in the world. Although mosques in this area were built much later than mosques in "Islamic Heartland" and evolved throughout a shorter time, these mosques managed to originate an architectural style, fascinating, enthralling and unique. Unlike the other mosques around the world, Southeast Asia traditional mosques do not represent domes or conventional minarets and ornamental techniques (the elements and features that distinguish mosques from other sacred buildings), but they still perfectly fulfill a mosque's functional requirements. Due to huge differences between these mosques and traditional mosques in Middle East or Central Asia, as well as the modesty that traditional mosques in Southeast Asia represent, these mosques rarely have been the matter of discussion in architectural studies. Nevertheless, the study believes the certain qualities and characteristics in these mosques that seem to attract the attention of fewer western architects and scholars are the strength of their design, since the traditional mosque style in Southeast Asia has proved that an Islamic building does not need to be an imitation from Middle Eastern or Central Asian styles, and yet be a perfect specimen in achieving the Islamic requirements, while representing local culture and traditions. Being confident about the local architectural features and design, as well as being utterly aware of environmental conditions, materials, and limitations, the Southeast Asian builders and artisans have left us valuable legacies, in which the pure Southeast Asian culture, distinctive constructional methods, and preferred aesthetic principals are easily conceivable.

Southeast Asia traditional mosques have been formed due to one valuable attribute of local entities; being receptive to new notions and ideas as long it does not interfere the strongly rooted local beliefs. These traditional mosques have adopted, adapted, infused, and applied the Hindu-Buddhist architectural principals, since the Hindu-Buddhist architecture was practiced in the region for almost fourteen centuries and fundamentally influenced architectural practices in Southeast Asian lands. The Hindu-Buddhist architectural style had a significant role in the formation of basic forms in Southeast Asia traditional mosques, such as the meru roof (multi-tiered pyramidal roof) and the Mandala (square- centralized floor plan); however, these traditional mosques still follow indigenous Southeast Asian architecture in the constructional techniques and decoration.

Following the Southeast Asian traditional mosque style, the vernacular Melaka mosques perfectly manifest the ability of local builders and artisans in the absorption and adaptation the new ideas from various foreign sources, while perfectly maintaining the unique local identity. Since the 15th century onward, Melaka, as the centre of trade and commerce, also the linkage between east and west, under the strong leadership of her Muslim rulers managed to attract numerous merchants from India, Europe, Middle East, and China. Hindu-Buddhist architecture by virtue of the prolonged and persistent interactions between the Indian Civilization and Southeast Asia had already influenced architectural practices in Melaka, while the strong political and economic interactions between the imperial court of China and Melaka, during the Melaka Kingdom, resulted in the initial cultural assimilations of two regions. The first architectural influences from China occurred in the construction of Melakan Kings' palaces or mosques. However, the brutal invasion of Portuguese at the early of the 16th century completely destroyed all the architectural evidence from that era, so it is not easy to determine the

Chinese influences in the Melakan architecture since the early stages of Chinese cultural assimilation into the city.

The increasing economic contacts between Melaka and China, especially after the European colonization, attracted abundance individual merchants from southern coasts of China, who gradually settled in Melaka. These Chinese have built buildings completely inspired by Southern Chinese architectural style in various typology, which ultimately became one of the sources of inspiration for vernacular mosques erected in Melaka (the Chinese buildings with Northern Chinese characteristics are of the recent practices in the Peninsula). It can be stated that the vernacular Melaka mosque is a variant of Southeast Asia traditional mosques, in which the Chinese architectural ideas, yielded from Chinese local entities are evident. The earliest intact mosques in Melaka have remained since the middle of the 18th century, the time when European culture had already exerted its influence over the Melaka's architectural scenery. As a result, vernacular Melaka mosques can be defined as structures with strong Hindu-Buddhist influences in the morphologic concepts of the roof and the plan layout, and pure indigenous Southeast Asian techniques in construction and more or less ornamental motifs, alongside the Chinese and European architectural impacts on ornamentation and application of certain materials and elements.

This study explored the earliest intact vernacular mosques in Melaka in order to determine the recreation of Chinese architectural ideas and elements in these architectural practices. Although there are some literary sources in this regard, they have provided general knowledge and none has penetrated deeply into this discussion; as a result, this study attempted to contribute more detailed and thorough information and evidence regarding the Chinese architectural influence on vernacular Melaka mosques. Through this study, discussions and comparisons between Classical Chinese

Architecture and case studies in Melaka was provided to identify the Chinese influences adopted by selected Melakan mosques. It seems that the vernacular Melaka mosques have been developed under the influence of people who originally came from Southern China; nonetheless, these mosques represent influences from Northern China. The Classical Chinese Architecture has impacted vernacular Melaka mosques in various architectural aspects, which are concluded as follows:

I. Classical Chinese ornamental features have been regenerated in vernacular Melaka mosques' roofs as the elements of the crown, the raised ridge with elongated-curved ends, and the decorated eave; however, the latter is discernible only in one of the case studies (Kampung Keling mosque). It should be noticed that the crowns in vernacular Melaka mosques bear carvings with Hindu-Buddhist motifs, while the concept of its application can be seen in both China and India. Furthermore, the raised ridges in case studies demonstrate a simplified variation of ridges in Classical Chinese, especially the elongated ends.

II. The colour-paintings between the eaves of a double-hipped roof in the Classical Chinese Architecture has been recreated as coloured sheen ceramic tiles between the eaves of the Tranguerah mosque's roof, while the application of clerestory windows, common in Southern Chinese practices, are discernible in Kampung Hulu, Kampung Keling, Peringgit, Pengkalan Rama, and Machap Lama mosques.

III. Although the application of flat clay tiles as roof's material was a common practice in Southeast Asia, the clay tiles applied to cover the case studies' roofs are as the same clay tiles that have been applied in Classical Chinese Architecture in Mainland China.

IV. The fenestration in the Chinese halls' façades has gone through a long development to create various elevations in different dynasties. One of the applied fenestration, which was common during the Song and the Qin dynasties, was the use of one central door and two flanking square windows. This arrangement can be seen in several Chinese temples' facades in Melaka; however, the shapes of the windows are in circle. The facades in the selected mosques, which follow this arrangement, are the south and north views of Kampung Hulu mosque and its qibla wall, the qibla walls in the Kampung Keling and Tranguerah mosques, the east, south, and north views in Peringgit and Machap Lapa mosques, as well as their qibla walls. It is probable that the appearance of this fenestration in case studies is a Chinese influence.

V. The proportion of 2:3 was a prevailing proportion in Chinese architectural practices since it is functionally efficient and aesthetically pleasing. This favourite proportion can be seen in various openings in the case studies.

VI. The application of lattices in the form of diamond was prevalent throughout China during the 18th and the 19th centuries. The Kampung Hulu, Kampung Keling, Tranguerah, and Peringgit mosques also hold lattices in the shape of diamond under the influence of Chinese architectural design.

VII. Machap Lama mosque is the only one among the case studies that represents facades with colour-paintings ornamentation. The application of colour-paintings on the façade of the Chinese temples in Melaka is extremely common; while in Classical Chinese practices in Mainland China, the facades are covered by simple colour usually in red. It should be mentioned that the theme of the colour paintings in Machap Lama mosque is of the floral motifs; while in Chinese temples in Melaka the themes are more related to Chinese holy personages or folklore.

The other case studies in this study demonstrate coloured sheen ceramic tiles on the facades as an ornamental mean very similar to the Chinese practices in Melaka, especially the shophouses' facades. Although there is a possibility that the coloured ceramic tiles, used in the selected mosque have been imported from Europe, the concept of the application of these ceramic tiles is probably from Chinese architecture.

VIII. The base in vernacular Melaka mosques is another feature appeared under the influence of Chinese architecture. Although the base was used widely in Hindu-Buddhist practices in Southeast Asia prior to the 15th century, its application in Melakan mosques has been strengthened due to strong influence of Chinese architecture in the city. Unlike the vernacular mosques in the other regions in Southeast Asia that stands on the stilts, all case studies in this study represent bases with centralized stairways (except for the Pengkalan Rama mosque), which in the case of Kampung Keling mosque, the body of the base is covered by sheen coloured ceramic tiles.

IX. The minaret, the most known monumental element in Islamic architecture, has gone through a fascinating transformation in vernacular Melaka mosque. The case studies that hold a minaret, present this element in the way completely different from conventional minarets in other countries in the terms of form and ornamentation. The minaret in the vernacular Melaka mosque is a reminiscent of Buddhist Chinese pagoda, especially the tower-style pagoda; however, these pagoda-like minarets are extremely simpler than Buddhist pagodas in ornamentation and openings. It is interesting to know that the application of this type of minaret is completely unique to Melaka, and even the minarets in Chinese mosques do not evoke the Buddhist pagodas and represent minarets in the form of a pavilion. Among the case studies in this study, the Kampung

Keling and Tranguerah mosques show the perfect examples of pagoda-like minarets, while the minaret in Kampung Hulu mosque is a combination of a Middle Eastern minaret and a lighthouse. Although the minaret in Pengkalan Rama mosque is a recent addition, yet it is a moderate imitation from Chinese pagodas.

X. Although vernacular mosques in Melaka demonstrate extreme modesty and simplicity, these mosques possess the most elaborated and adorned minbars with astonishing floral carvings. The minbar in the case studies has been formed under the strong influence of Chinese furniture making and interior design to create a minbar with decorative carvings very similar to the applied themes in the Chinese interior walls' decoration, as well as in Chinese furniture, such as imperial sedan chair or throne chair. These minbars also hold the pyramidal roofs with curved ridges, the crowns and ornate eaves, which all are from Chinese influence.

XI. Among the selected mosques in this study only the Kampung Hulu, Kampung Keling, and Tranguerah mosques represent portals, while the other samples hold simple doorways, which are of the recent additions. The portals in mentioned mosques are the combinations of European and Chinese architectural design, and represent no sign of traditional Islamic, Malay or Hindu-Buddhist architecture. The portal in the Kampung Hulu mosque holds a pyramidal roof with inward curved ridges and elongated ends, as well as a carved crown on the apex, while the clay tiles covering the surface of the roof. The portals in Kampung Keling and Tranguerah mosques represent gable roofs with raised main ridge and copings, which are covered by simple carvings in floral motifs, while the clay tiles covering the surface of these roofs.

7.2 Recommendations

This study has explored vernacular mosques in Melaka and illustrated six case studies, which have been developed through centuries by adoption and adaptation the new ideas from various cultures and utilisation of local notions to originate an Islamic design, which holds indigenous Southeast Asian, Hindu-Buddhist, Chinese, European, and more or less Middle Eastern architectural characteristics in an integrated manner, while the harmonious unity and the unique identity can be seen in most of the design. There are some elements in the design of the selected mosques that have not been integrated with the whole design superbly, such as the columns with Ionic Roman capitals inside the Kampung Keling's prayer hall, the portal's broken or semicircular Baroque pediments, as well as the columns with Corinthian Roman capitals in Tranguerah mosque, and the columns around its verandah. In contrast to mentioned feature, it can be discerned that the indigenous Malay timber columns and the carvings as ornamental means are good complements to the design. Notwithstanding that there are some features in the selected Melakan mosques, which do not accentuate the region's indigenous culture (such as the western elements), the vernacular Melaka mosques still hold the strong identity and harmony, and can be considered as excellent examples of hybrid architecture. So it is extremely unfortunate that the current Islamic architecture in Peninsular Malaysia was not able to continue the charm and fascinations of the vernacular style to create uniqueness and beauty. The recent mosques in the region are mostly inferior imitations from Middle Eastern or Central Asian mosque styles, or in some cases follow the pan-Islamic architectural design, in which all the expressions of local architectural qualities and characteristics are blighted. The recent Islamic constructions in Peninsular Malaysia seem to abandon all the traditional forms, arrangements, and decorations to build eclectic compositions of Arabic, Ottoman, Iranian, and Egyptian architectural features. The unnecessary

tendency to apply domes in every possibility in these modern practices or the application of the ornamental features and architectural elements that completely differ from the local uniqueness not only create an architectural style, which does not represent Southeast Asian culture and identity, but also forms structures that are not compatible with the environmental condition of the region.

Since in the Islamic teachings there is no specific description concerning the construction of the house of worship, every culture can translate the Islamic symbols and requirements through their own individuality to develop a unique typology in Islamic architectural design with distinctive architectural characteristics and aesthetic qualities. The predilection for foreign Islamic features such as the dome-shape roofs, Iwans, or Middle Eastern minarets and ornamentations resulted in the Islamic designs that completely ignore the traditional forms, and elements from indigenous Southeast Asian Islamic design, such as the pyramidal roof, the Mandala, the long overhangs, and the louvered windows. Although it is not wise to search for a cure-all solution in the past, this study believes that some of the traditional features and means in the region's Islamic architecture have the potential to retrieve in modern Islamic structures. It is beyond this study to foster any specific method or idea in this regard; however, it is evident to her that rereading the local and traditional attributes, and interpreting them in a new way in the current Islamic constructions may retrieve the harmonious unity, regional uniqueness, cultural identity, and environmental compatibility in the Islamic architecture of Peninsular Malaysia. It seems that the traditional forms of the roof and the floor plan, traditional decorative methods, as well as the language of tropical design in Southeast Asian Islamic architecture are the most valuable merits in these vernacular mosques, which can be retrieved in the current Islamic practices in the region in a way that maintains the spirit of the time, as well as the distinctive Southeast Asian architectural style.

It is essential to understand that the inspiration procedure from the traditional concepts should carry out with utter knowledge and attentive considerations. This creative task cannot be done without a meticulous and careful work of a group of knowledgeable scholars and architects. The problem in regenerating ideas from the past without enough knowledge shows itself perfectly in the recently constructed vernacular style mosques in the Peninsula, in which the crowns and ridge ends appear in the shape of domes; as detached elements from the whole, these features blight the harmony and identity in the structures.

Moreover, as it is obvious, the value of an architectural specimen is immediately related to its preservation and restoration. Since the vernacular Melaka mosques are continually exposed to rough natural and human forces, they cannot maintain their original conditions forever. As a result, the preservation and restoration of Melaka vernacular mosques as cultural assets become one of the most important discussions. Since these mosques are products of hybrid architectural designs and ideas, to preserve their utility, beauty, strength and sacredness, it is vital to detect different cultural influences in these mosques carefully, in order to maintain the identity and pristine in the preservation and restoration process. The Hindu-Buddhist, Chinese, Malay, and European architectural styles meet and integrate with each other in vernacular Melaka mosques, thus prior to any preservation and restoration, it is essential to study each one of the mentioned architectural styles superbly to identify attentively their influence on Melakan mosques. Each one of the case studies in this study has faced several restoration procedures, in which the identity of the mosque has been preserved; however, due to negligence, it seems that these preservation procedures are not completely successful. For instance, the application of the material in these mosques could be carried out with more careful considerations since most of

the utilised materials in later renovation processes do not evoke any of the architectural languages that have influenced these mosques.

This study has tried to produce an architectural collection from traditional means and elements in vernacular Melakan mosques with Chinese influences to provide a base for further studies in this domain. In the quest for Chinese architectural influences in vernacular Melaka mosques, many aspects have intrigued this study attention, which is beyond this study, as each aspect needs careful and extensive observation and investigations.

I. In this research, the poetic influence of Classical Chinese Architecture on the curve of the pyramidal roof has been studied through physical expression; however, its proportional aspects should be studied and examined meticulously since there are strong evidence showed that the Chinese architectural characteristics also influenced this feature proportionally. Moreover, it is essential to determine each Melakan mosque's pyramidal roof with great observation and examination in order to provide accurate documented records since these architectural features belong to cultural treasures of this region.

II. In this research, the pagoda-like minarets, which are fascinating monumental elements unique to Melaka have been studied through morphological and ornamental aspects. It is clear that these elements must be defined with more accurate measurements in order to investigate the influence of Chinese architecture on the proportional aspect and to provide precise documented records.

III. The minbar, which is the most intricate functional-ornamental furniture in vernacular Melaka mosque's interior design must be regarded as the subject of more detailed and deep studies, not only to detect the Chinese influences but

also to provide accurate drawings in order to study the sophisticated indigenous Southeast Asian timber carvings.

IV. The main focus of this study regards to the Chinese influence on vernacular Melaka mosques in terms of form and ornamentation. It is also extremely essential to explore the meaning of these influences in order to provide more in depth knowledge regarding the evolution of the Islamic architecture, as well as the cultural assimilation in the region. For instance, the numerological studies must carry out in these vernacular mosques to determine the reasons of the recreation of certain Chinese concepts.

V. In order to augment and improve the Peninsula's architectural studies, it is vital to observe and explore the influence of Chinese architecture on other architectural typologies such as vernacular houses. Furthermore, it is important to expand these studies from Melaka to other areas in the Peninsular Malaysia, such as Penang, to investigate the evolution of Chinese architectural influences on the Peninsula's architectural scene.

VI. The Western influence on vernacular Melaka mosques is easily discernible, which should be taken under careful an detailed considerations in order to extend and complete the knowledge considering the various foreign architectural influences on vernacular mosques in Melaka.

VII. The similar study must be conducted in other Southeast Asian countries, for instance in Indonesia. In order to follow the development of Islamic architecture in Southeast Asia and to explore the evolution of the Chinese influences on Southeast Asian traditional mosques, it is important to carry out the same study in countries with stronger Chinese domination and to compare the result with findings from perusals in countries with less Chinese domination.

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APPENDIX A

Mosques In The State Of Melaka

Number	Mosque	Location
1	Air Hitam Darat	Alor Gajah
2	Air Hitam Pantai	Alor Gajah
3	Air Limau	Alor Gajah
4	Air Molek KSB	Alor Gajah
5	Air Pa'abas	Alor Gajah
6	Air Kangkong	Jasin
7	Air Merbau	Jasin
8	Air Panas	Jasin
9	Air Tawar	Jasin
10	Asahan	Jasin
11	Al-Ghaffar	Jasin
12	Alai	Melaka
13	Ayer Keroh	Melaka
14	Ayer Molek	Melaka
15	Al-Alami	Melaka
16	Al-Ehsan	Melaka
17	Al-Azim	Melaka
18	Al-Ghaffar	Melaka
19	As-Salam	Melaka
20	Belimbing Dalam	Alor Gajah
21	Beringin	Alor Gajah
22	Berisu	Alor Gajah
23	Bukit Bulat	Alor Gajah
24	Batang Melaka	Jasin
25	Batu Gajah	Jasin
26	Berangan Enam	Jasin
27	Bukit Senggeh	Jasin
28	Bukit Tembakau	Jasin
29	Balik Bukit	Melaka
30	Batang Tiga	Melaka
31	Bakar Batu	Melaka
32	Banda Hilir	Melaka
33	Batu Berendam	Melaka
34	Bertam Maliam	Melaka
35	Bertam Ulu	Melaka
36	Bukit Baru	Melaka
37	Bukit Beruang	Melaka

Number	Mosque	Location
38	Bukit China	Melaka
39	Bukit Darat	Melaka
40	Bukit Durian	Melaka
41	Bukit Gedong	Melaka
42	Bukit Bayang	Melaka
43	Bukit Katil	Melaka
44	Bukit Kechil TBR	Melaka
45	Bukit Kechil	Melaka
46	Bukit Piatu	Melaka
47	Bukit Lintang	Melaka
48	Bukit Nibong	Melaka
49	Bukit Pegoh	Melaka
50	Bukit Rambai	Melaka
51	Chabau	Jasin
52	Chenderah	Jasin
53	Chinchin	Jasin
54	Chohong	Jasin
55	Cheng	Melaka
56	Datuk Janggut	Alor Gajah
57	Durian Daun	Alor Gajah
58	Durian Tunggal	Alor Gajah
59	Daerah Jasin	Alor Gajah
60	Duyong	Melaka
61	Felcra Ramuan China	Alor Gajah
62	Felda Hutan Percha	Alor Gajah
63	Felda Bukit Senggeh	Jasin
64	Felda Kemendor	Jasin
65	Gadek	Alor Gajah
66	Gangsa	Alor Gajah
67	Hujung Pasir	Melaka
68	Jamek Alor Gajah	Alor Gajah
69	Jamek Putera	Alor Gajah
70	Jamek Jasin	Jasin
71	Jamek Merlimau	Jasin
72	Jus	Jasin
73	Kampung Baru KSB	Alor Gajah
74	Kampung Ladang	Alor Gajah
75	Kampung Pulau	Alor Gajah
76	Kampung Tengah KSB	Alor Gajah
77	Kelemak	Alor Gajah
78	Kemuning	Alor Gajah
79	KG Baru Alor Gajah	Alor Gajah

Number	Mosque	Location
80	Kuala Ina	Alor Gajah
81	Kuala Linggi	Alor Gajah
82	Kuala Sungai Baru	Alor Gajah
83	Kelubi	Jasin
84	Kesang Luar	Jasin
85	Kesang Tua	Jasin
86	Kampung Gelam	Melaka
87	Kampung Hulu	Melaka
88	Kampung Kling	Melaka
89	Kampung Padang	Melaka
90	Kampung Tun Razak	Melaka
91	Kampung Kelubi	Melaka
92	Kampung Sempang	Melaka
93	Kandang	Melaka
94	Kem Terendak	Melaka
95	Kerubong	Melaka
96	Klebang Besar	Melaka
97	Lendu	Alor Gajah
98	Londang	Alor Gajah
99	Lubok China	Alor Gajah
100	Lubok Redan	Alor Gajah
101	Limbongan	Melaka
102	Machap Lama	Alor Gajah
103	Masjid Tengah	Alor Gajah
104	Melaka Pindah	Alor Gajah
105	Melekek Dalam	Alor Gajah
106	Melekek Luar	Alor Gajah
107	Menggong	Alor Gajah
108	Masjid Baru	Jasin
109	Masjid Tua	Jasin
110	Merlimau Pasir	Jasin
111	Merlimau Utara	Jasin
112	Padang Sebang	Alor Gajah
113	Panchor	Alor Gajah
114	Parit Melana	Alor Gajah
115	Paya Datok	Alor Gajah
116	Pegoh	Alor Gajah
117	Pengkalan Balak	Alor Gajah
118	Pulau Sebang	Alor Gajah
119	Permatang Ilmu	Alor Gajah
120	Parit Gantong	Jasin
121	Parit Penghulu	Jasin

Number	Mosque	Location
122	Paya Tanjung	Jasin
123	Pulai	Jasin
124	Padang Temu	Melaka
125	Pantai Kundur	Melaka
126	Pantai Rombang	Melaka
127	Pantai Tanah Merah Jaya	Melaka
128	Pasir Puteh	Melaka
129	Paya Mengkuang	Melaka
130	Paya Redan	Melaka
131	Paya Rumput BT	Melaka
132	Paya Rumput Jaya	Melaka
133	Pengkalan Batu	Melaka
134	Pengkalan Minyak	Melaka
135	Pengkalan Rama	Melaka
136	Pengkalan Ranggam	Melaka
137	Peringgit	Melaka
138	Permatang Duyong	Melaka
139	Permatang Pasir	Melaka
140	Pernu	Melaka
141	Popok Asam	Melaka
142	Pulau Samak	Melaka
143	Penjara sg.Udang	Melaka
144	Qaryah Alai	Melaka
145	Ramuan China Besar	Alor Gajah
146	Ramuan China Kechil	Alor Gajah
147	Rantau Panjang	Alor Gajah
148	Rumbia	Alor Gajah
149	Rim	Jasin
150	Simpang Empat	Alor Gajah
151	Solok Duku	Alor Gajah
152	Sungai Buluh	Alor Gajah
153	Sungai Jernih	Alor Gajah
154	Sungai Petai	Alor Gajah
155	Sungai Siput	Alor Gajah
156	Sungai Tuang	Alor Gajah
157	Sebatu	Jasin
158	Selandar	Jasin
159	Sempang	Jasin
160	Sempang Kerayong	Jasin
161	Seri Kesang	Jasin
162	Seri Mendapat	Jasin
163	Seri Minyak	Jasin

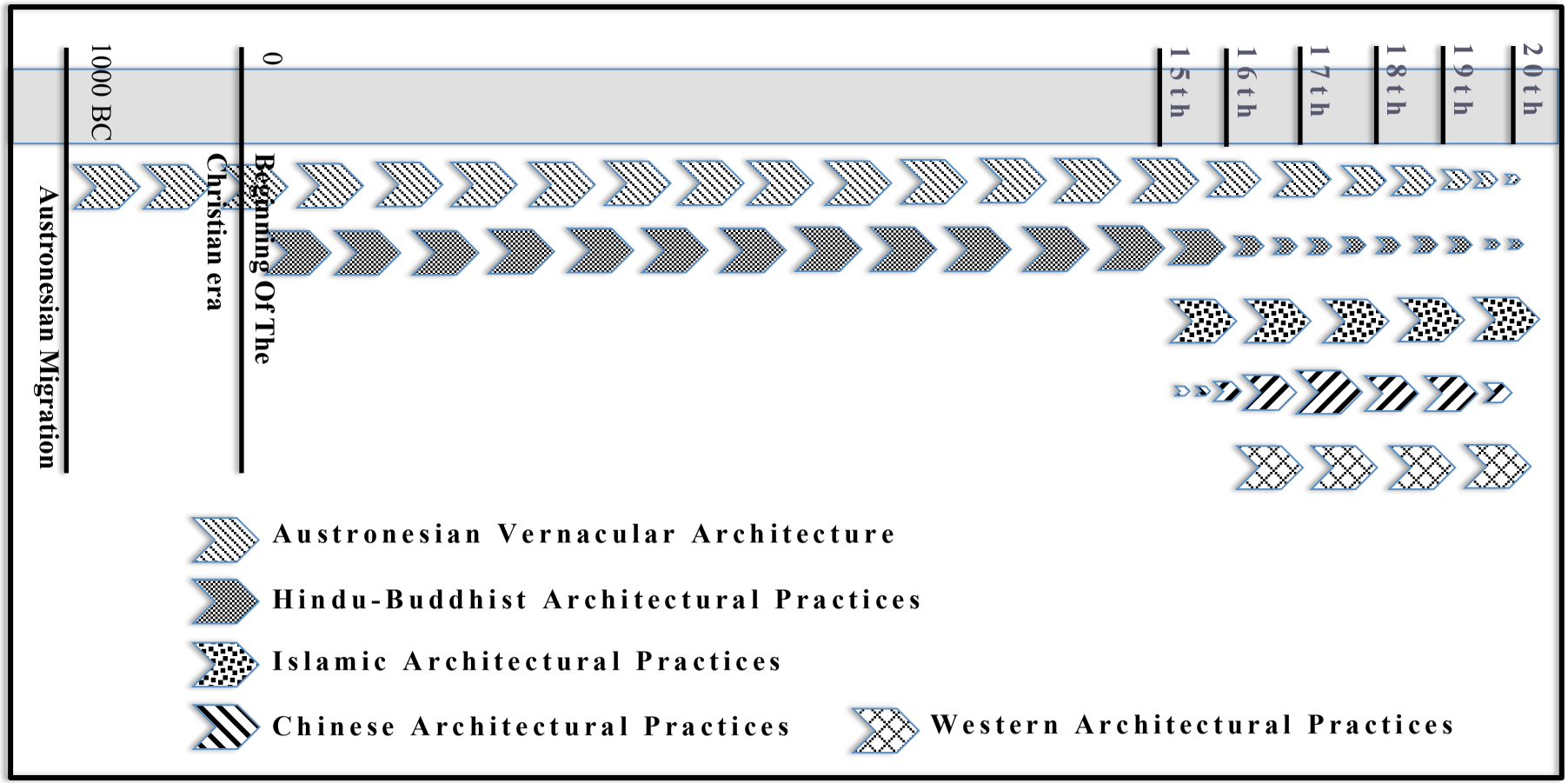
Number	Mosque	Location
164	Serkam Darat	Jasin
165	Serkam Pantai	Jasin
166	Sungai Rambai	Jasin
167	Semabok	Melaka
168	Sungai Putat	Melaka
169	Selat	Melaka
170	Sayyidina Ali	Melaka
171	Taboh Naning	Alor Gajah
172	Tanjung Bidara	Alor Gajah
173	Tanjung Dahan	Alor Gajah
174	Tanjung Rimau	Alor Gajah
175	Tebong	Alor Gajah
176	Telok Gong	Alor Gajah
177	Taman Maju	Jasin
178	Tedong	Jasin
179	Tehel	Jasin
180	Terentang	Jasin
181	Tun Abd Ahmad	Melaka
182	Taman Merdeka	Melaka
183	Tambak Balai Panjang	Melaka
184	Tambak Paya	Melaka
185	Tampoi	Melaka
186	Tanah Merah Kerubong	Melaka
187	Tangga Batu Kechil	Melaka
188	Tangga Batu Pekan	Melaka
189	Tanjung Keling	Melaka
190	Tanjung Minyak	Melaka
191	Telok Mas	Melaka
192	Tranguerah	Melaka
193	Utem	Alor Gajah
194	Umbai	Jasin
195	Ulong Pasir	Melaka

* The case studies have been highlighted

Source: Melaka Islamic Religious Department and Melaka Historic City Council

APPENDIX B

Chronological Time-line: Architectural Practices In Melaka



Source: O'Neill, 1994; Bellwood, 1997; Vlatseas, 1999; Munoz, 2006

APPENDIX C

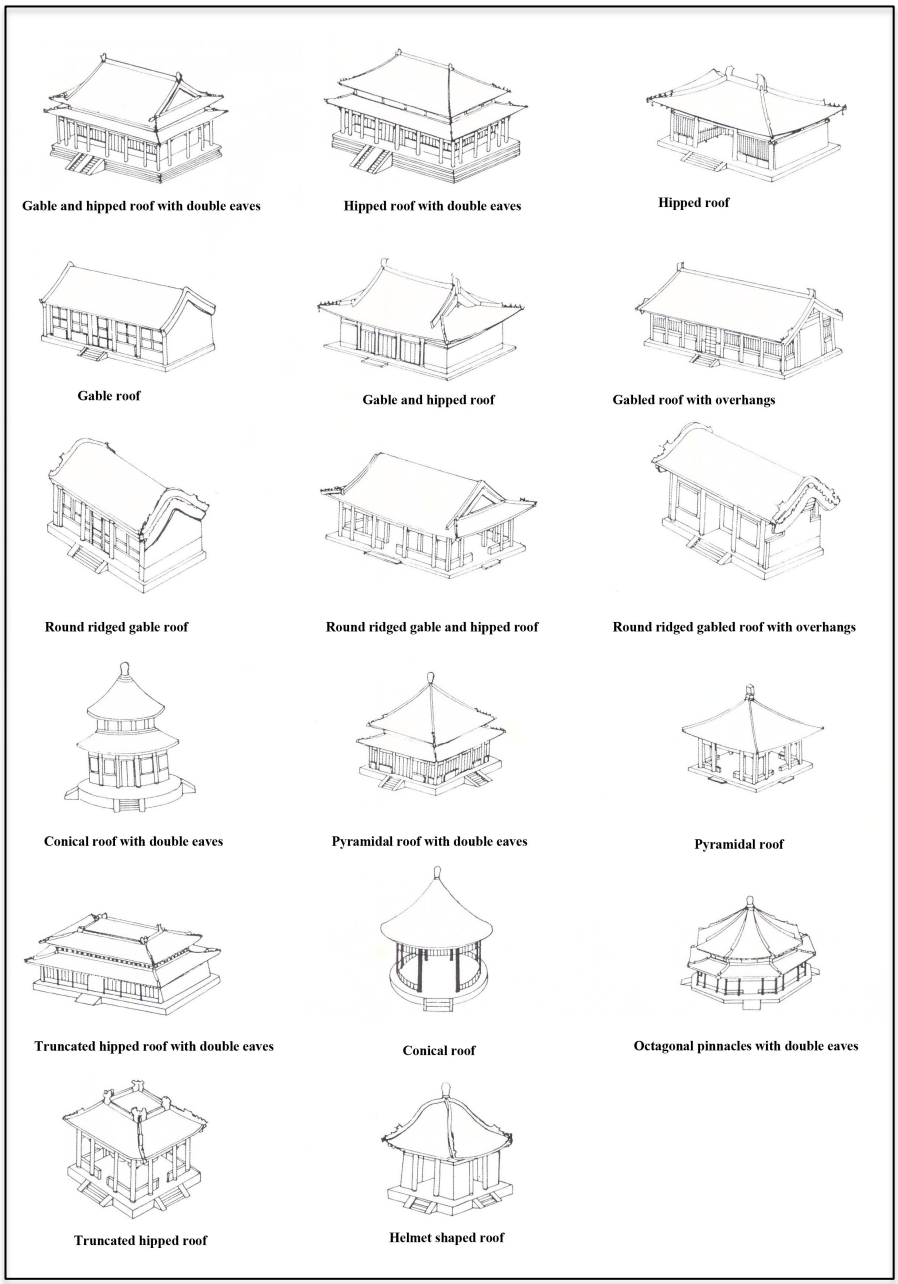
Chronological Table of the Chinese Dynasties

The Paleolithic Period	Approx. 10,000 years ago
The Neolithic Age	Approx. 10,000-4,000 years ago
Xia Dynasty	2070-1600 BC
Shang Dynasty	1600-1046 BC
Western Zhou Dynasty	1046-771 BC
Spring and Autumn Period	770-476 BC
Warring States Period	475-221 BC
Qin Dynasty	221-206 BC
Western Han Dynasty	206 BC- 25 AD
Eastern Han Dynasty	25-220 AD
Three Kingdoms	220-280 AD
Western Jin Dynasty	265-317 AD
Northern and Southern Dynasties	420-589 AD
Sui Dynasty	581-618 AD
Tang Dynasty	618-907 AD
Five Dynasties	907-960
Northern Song Dynasty	960-1127
Southern Song Dynasty	1127-1279
Yuan Dynasty	1206-1368
Ming Dynasty	1368-1644
Qing Dynasty	1616-1911
Republic of China	1912

Source: Liu, 1989

APPENDIX D

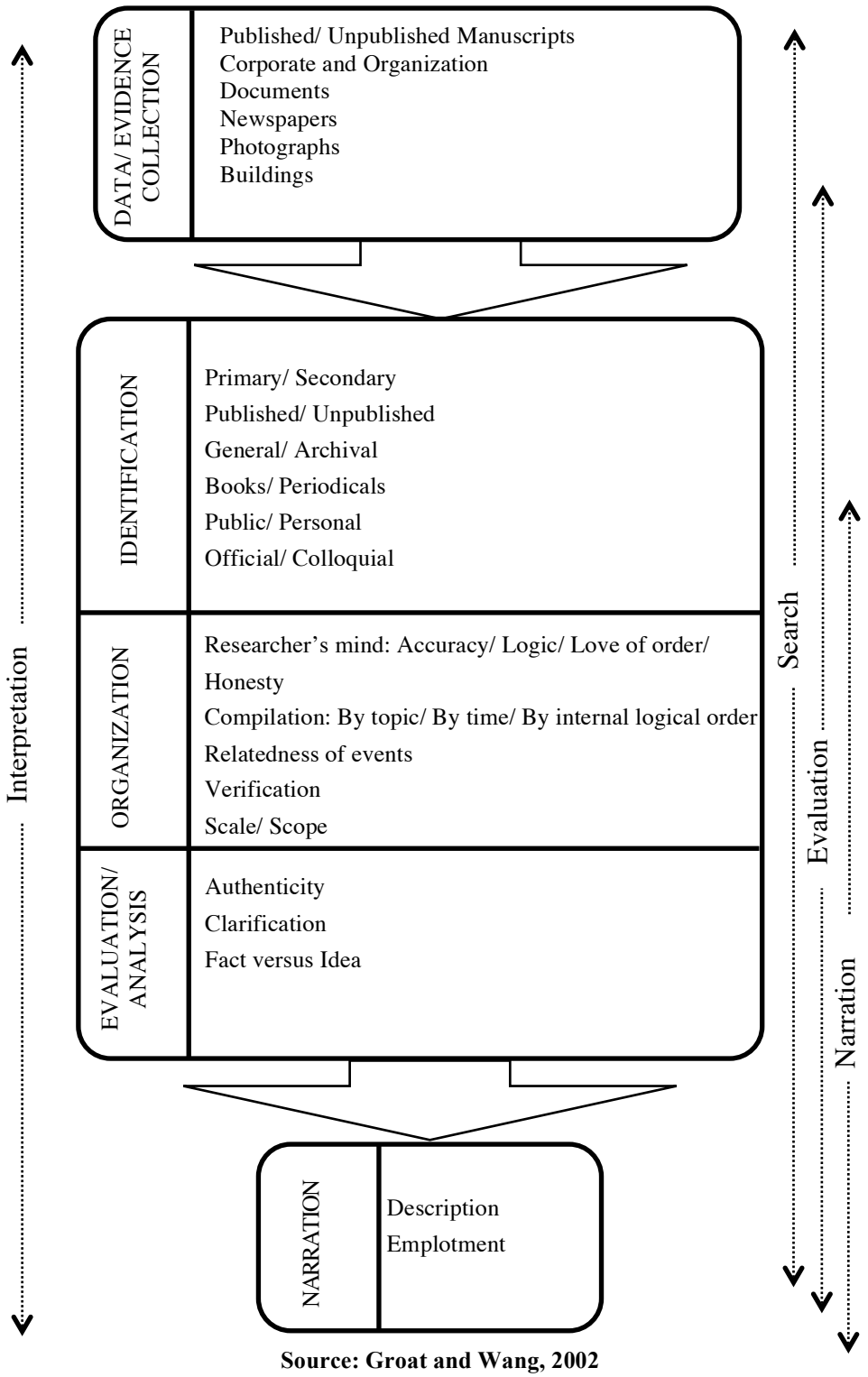
Various Forms of Chinese Roofs



Source: Ru and Peng, 1998

APPENDIX E

Diagram of Historical-Comparative Research Method



Source: Groat and Wang, 2002